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NEW OR NOTEWORTHY PHILIPPINE PLANTS, XVI

By ELMER D. MERRILL

Director and Botanist, Bureau of Science, Manila

The sixteenth paper of this series is essentially like its predecessors, the last number having been published in 1919.¹ The present paper contains the descriptions of about one hundred presumably hitherto undescribed species of flowering plants, with some notes on nomenclature and some proposed changes in generic and specific names, as well as the records for a few species previously described from extra-Philippine material now found for the first time in the Archipelago. The genera *Fibraurea* of the Menispermaceae, *Phyllochlamys* of the Moraceae, *Eurycoma* of the Simarubaceae, and *Ixonanthes* of the Linaceae are new to the Philippine flora, the last two being represented by previously undescribed species.

A large number of the new species described in the present paper is from the eastern coast of Surigao Province, Mindanao, and the neighboring islands of Dinagat, Siargao, and Bucas Grande, regions in which no intensive botanical collecting has hitherto been done. Extensive collections were made in these regions by Messrs. M. Ramos and J. Pascasio, April to June, 1919; and, as is usual in previously unexplored regions in the Philippines, their material contains a high percentage of previously undescribed species. Doubtless any general collection made in the same regions, but at a different time of the year, would yield an equally high percentage of novelties.

¹ Merrill, E. D., New or noteworthy Philippine Plants, XV, Philip. Journ. Sci. 14 (1919) 365-457.

PANDANACEAE

PANDANUS Linnaeus f.

PANDANUS APICULATUS sp. nov. § *Rykia*.

Arbor, circiter 5 m alta, ramulis 2.5 ad 3 cm diametro; foliis circiter 1 m longis et 5.5 cm latis, in siccitate subflaccidis, sursum angustatis, apice tenuiter acuminatis, inter nervis transversalibus distincte reticulatis; infructescentiis lateralibus, 10 ad 15 cm longis, syncarpiis spicatim dispositis, plerumque 10, confertis, ovoideis ad globosis, 15 cm diametro; drupis numerosis, confertis, cylindricis vel oblongis, 1-locellatis, 6 ad 7 mm longis, 2 ad 2.5 mm diametro, apice rotundatis et acute apiculatis, stylis circiter 1 mm longis.

A tree, about 5 m high, the ultimate branches 2.5 to 3 cm in diameter. Leaves about 1 m long and 5.5 cm wide, somewhat flaccid when dry, the margins armed with rather conspicuous teeth, the midrib beneath near the base with retrorse teeth and toward the apex with antrorse teeth, the 2 lateral nerves sometimes with a few scattered teeth on the upper surface near the apex, the blade more or less narrowed to the distinctly and rather slenderly acuminate apex, distinctly transversely reticulate between the numerous secondary nerves. Infructescences lateral, from the base of the apical tufts of leaves, 10 to 15 cm long, the syncarps ovoid to globose, sessile, about 1.5 cm in diameter, usually about 10 on each infructescence, the peduncles closely covered in the lower half with numerous, imbricate, spirally arranged, oblong bracts, which are usually about 4 cm in length. Drupes numerous, crowded, red, cylindric or oblong or sometimes narrowed below, 1-celled, 6 to 7 mm long, 2 to 2.5 mm in diameter, the apical 1.5 to 2 mm free, rounded, terminated by the indurated, slightly upward-curved, usually acute style, which is usually about 1 mm in length.

MINDANAO, Surigao Province, *Bur. Sci. 34572 Ramos & Pascasio*, April 25, 1919, on ridges, altitude about 690 meters, at the iron deposit on the northeast coast.

A rather remarkable species on account of its lateral infructescences and its multibracteate peduncles. It is manifestly allied to *Pandanus multibracteatus* Merr., but has much wider leaves and differs essentially in its fruit characters, the drupes being much smaller and not prolonged into slender, elongated tips, as in the latter species.

PANDANUS DINAGATENSIS sp. nov. § *Rykia*.

Frutex parvus, ramulis circiter 3 cm diametro; foliis usque ad 1.75 m longis, circiter 6.5 cm latis, subcoriaceis, sursum

angustatis, acuminatis; infructescentiis plerumque 3, pedunculatis, syncarpiis circiter 10, spicatum dispositis, oblongo-ovoideis ad anguste oblongis, 2 ad 4 cm longis, confertis, pedunculo usque ad 10 cm longo; drupis minutis, confertis, oblongis, 1-locellatis, 5 ad 6 mm longis, usque ad 2 mm diametro, apice rotundatis vel conicis, stigma plerumque rotundata et circiter 1 mm diametro.

A small shrub, the ultimate branches about 3 cm in diameter. Leaves up to 1.75 m long, about 6.5 cm wide, subcoriaceous, the margins armed with small teeth, the midrib beneath in the upper part with small scattered teeth, more or less narrowed above to the acuminate apex. Syncarps about 10, spicately arranged on each peduncle, oblong-ovoid to narrowly oblong, 2 to 4 cm long, 1.5 to 2 cm wide, crowded toward the upper tips of the peduncles, usually 3 or more infructescences terminating each branchlet, the peduncles up to 10 cm long and 5 to 7 mm in diameter. Drupes very numerous, crowded, oblong or somewhat narrowed below, 1-celled, 5 to 6 mm long, 2 mm in diameter or less, their apices somewhat rounded or conical, terminated by the flattened and rounded or sometimes papilliform stigma which is usually less than 1 mm in diameter.

DINAGAT, *Bur. Sci.* 35183 Ramos & Pascasio, May 12, 1919, in forests along streams at low altitudes.

A species remarkable for its numerous, small, crowded syncarps and for the very unusual character of several peduncles terminating each branchlet. The species is further characterized by its very small drupes, and is not closely allied to any previously described form.

PANDANUS MULTIBRACTEATUS sp. nov. § *Acrostigma*.

Arbor, circiter 4 m alta, ramulis circiter 3.5 cm diametro; foliis rigidis, coriaceis, anguste acuminatis, 1.5 ad 2 m longis, 3 ad 3.5 cm latis; infructescentiis lateralibus, spicatis, pedunculo usque ad 10 cm longo, bracteis numerosis spiraliter dispositis, oblongis, 2 ad 3 cm longis, obtecto; syncarpiis 8 ad 10, confertis, ovoideis, 1.5 ad 2.5 cm longis, drupis numerosis, usque ad 3 mm diametro, confertis, stylis tenuibus, rigidis, integris vel obscure dentatis, circiter 5 mm longis.

A small tree, about 4 m high, the ultimate branches about 3.5 cm in diameter. Leaves coriaceous, rigid, 1.5 to 2 m long, 3 to 3.5 cm wide, the margins armed with short, sharp, rather closely arranged teeth, gradually narrowed upward to the slenderly acuminate apex. Infructescences lateral, from the branches below the leaves, the peduncles up to 10 cm in length,

densely covered by spirally arranged, very numerous, imbricating, coriaceous, rigid, oblong, entire or slightly toothed bracts, 2 to 3 cm in length. Syncarps 8 to 10, red, spicately arranged, rather crowded, ovoid, 1.5 to 2.5 cm long, composed of numerous, densely arranged, 1-celled drupes which are 3 mm or less in diameter, their apices abruptly narrowed, somewhat ridged, terminated by the slender, entire or slightly toothed, rigid, straight or somewhat curved styles which are up to 5 mm in length.

MINDANAO, Surigao Province, *Bur. Sci.* 34571 (type), 34819 Ramos & Pascasio, April 25, 1919, at the iron deposit on the northeast coast on the Hegapit River, altitude about 680 meters. The fruit red when mature.

A remarkable species, not closely allied to any previously described Philippine form and easily recognizable by its lateral, spicate inflorescences; by its small, ovoid syncarps, the tips of the drupes narrowed and elongated; and by the multibracteate peduncles.

PANDANUS RAMOSII sp. nov. § *Bryantia*.

Frutex, 2 ad 3 m altus, ramulis ultimis circiter 1.5 cm diametro; foliis crasse coriaceis, linearis, circiter 1.5 m longis, 2 ad 2.5 cm latis, apice tenuiter acuminatis; syncarpiis terminalibus, erectis, solitariis, ovoideis, 5 ad 6 cm longis, pedunculo usque ad 20 cm longo, circiter 7 mm diametro; drupis numerosis, 1-locellatis, 10 ad 12 mm longis, circiter 3 mm diametro, anguste oblongis, $\frac{1}{2}$ superioribus liberis, rotundatis, stigma sessile, platum, circiter 1.3 mm diametro.

A shrub, 2 to 3 m high, the ultimate branches about 1.5 cm in diameter. Leaves thickly coriaceous, rigid, rather pale when dry, linear, about 1.2 m long, 2 to 2.5 cm wide, narrowed above to the rather slender, acuminate apex, the margins distinctly toothed, the midrib on the lower surface in the upper part more or less toothed as are the 2 primary veins on the upper surface toward the apex. Syncarps terminal, erect, solitary, ovoid, 5 to 6 cm long, somewhat triangular in cross section, the basal part somewhat inclosed by a few, broadly ovate, leaflike bracts, the peduncles up to 20 cm long, triangular, about 7 mm in diameter, supplied with 2 or 3 reduced leaves 25 to 40 cm in length in addition to the terminal, leaflike bracts. Drupes very numerous, crowded, red, 1-celled, 10 to 12 mm long, about 3 mm in diameter, narrowly oblong, the apical half free, somewhat angular, rather abruptly rounded or narrowed at the apex and terminated by the flat, sessile, truncate stigma, which is usually about 1.3 mm in diameter.

BUCAS GRANDE, *Bur. Sci.* 35136 Ramos & Pascasio, June 10, 1919, in dry forests at low altitudes. The same species is apparently represented by *Bur. Sci.* 35198 Ramos & Pascasio from the neighboring island of Dinagat, the latter number consisting of leaves only.

A species not closely allied to any previously described Philippine form, well characterized by its narrow, rigid leaves; its solitary, erect, long-peduncled syncarps, the peduncles being supplied with several reduced leaves and several additional, reduced, apical, leaflike bracts; and by its very numerous, small, narrow, 1-celled drupes. Allied to *Pandanus brachyspathus* Martelli, but with very different leaves.

PANDANUS TENUIPEDUNCULATUS sp. nov. § *Bryantia*.

Frutex erectus, ramulis 1 ad 1.3 cm diametro; foliis subflaccidis, anguste oblongo-lanceolatis, 50 ad 75 cm longis, 3 ad 4.5 cm latis, apice abrupte angustatis, breviter acuminatis; syncarpiis ovoideis, erectis, circiter 3 cm diametro, pedunculo usque ad 9 cm longo, 5 mm diametro; drupis numerosis, obovoideis ad anguste obovoideis, 10 ad 12 mm longis, circiter 5 mm diametro, 1-locellatis, apice rotundatis, stigma sessile, planum, circiter 1.2 mm diametro.

A shrub, the ultimate branches 1 to 1.3 cm in diameter. Leaves subflaccid, narrowly oblong-lanceolate, 50 to 75 cm long, 3 to 4.5 cm wide, about the same width throughout or somewhat narrowed below, the apex abruptly tapering to the short acumen, the latter 5 mm long or less, the margins rather finely toothed, the midrib beneath in the uppermost part with few small teeth, the 2 lateral nerves on the upper surface toward the apex with similar scattered teeth. Heads ovoid, solitary, terminal, erect, about 3 cm in diameter, the peduncles triangular, about 9 cm long, 5 mm in diameter. Drupes red, obovoid to narrowly obovoid, 10 to 12 mm long, up to 5 mm in diameter, 1-celled, narrowed below to the cuneate base, the apical portion rounded, the very tip sometimes depressed, terminated by the flat stigma which is about 1.2 mm in diameter.

MINDANAO, Surigao Province, *Bur. Sci.* 34739 Ramos & Pascasio, June 20, 1919, in open forests at low altitudes. *Bur. Sci.* 34842 Ramos & Pascasio from Siargao Island, a specimen with staminate flowers, probably represents the same species.

This species is readily distinguishable by its rather flaccid leaves which are of about the same width throughout and rather abruptly narrowed to the short-acuminate apex; and by its slenderly peduncled, solitary, erect syncarps.

PIPERACEAE

PIPER Linnaeus

PIPER ANGUSTIPELTATUM sp. nov. § *Eupiper*.

Frutex dioicus, scandens, glaber; foliis oblongis, nitidis, 10 ad 16 cm longis, aequilateralibus, chartaceis, basi rotundatis et anguste peltatis, 7-nerviis, apice perspicue acuminatis; spicis ♀ cylindricis, circiter 3 cm longis et 12 mm diametro, bracteis peltatis, glabris, stylis tenuibus, patulis, confertis, 3 ad 4 mm longis.

A glabrous, dioecious vine, the ultimate branches terete, about 2 mm in diameter. Leaves chartaceous, oblong, 10 to 16 cm long, 3 to 6 cm wide, equilateral or nearly so, the base rounded and narrowly peltate, the petioles inserted, 2 to 4 mm from the edge of the leaf, 7-nerved, the inner pair of nerves extending to the apex, the reticulations horizontal, distinct, subparallel, the apex rather prominently acuminate, both surfaces shining when dry; petioles 2 to 2.5 cm long. Pistillate spikes, leaf-opposed, cylindric, about 3 cm long and 12 mm in diameter, their peduncles up to 2 cm in length; bracts peltate, rounded, 0.8 mm in diameter, styles numerous, densely crowded, spreading, slender, 3 to 4 mm long. Stigmas 2, recurved, 0.5 mm long.

LUZON, Tayabas Province, Mount Binuang, *Bur. Sci.* 28846 Ramos & Edaño, May 19, 1917, in damp forests along rivers at low and medium altitudes.

This species is similar and very closely allied to *Piper longistigmum* C. DC. from which it is easily distinguished by its narrowly peltate leaves.

PIPER CATUBIGENSE sp. nov. § *Eupiper*.

Frutex dioicus, scandens, foliis subtus ad costa nervisque pubescens; foliis penninerviis, membranaceis, lanceolatis ad oblongo-ovatis, 15 ad 17 cm longis, basi obtusis ad rotundatis, leviter inaequilateralibus, apice tenuiter acuminatis, nervis utrinque circiter 9, distinctis; spicis ♂ cylindricis, tenuibus, 5 ad 7 cm longis, circiter 3 mm diametro, bracteis peltatis.

A scandent, dioecious vine, the branchlets, petioles and leaves along the midrib and nerves on the lower surface distinctly pubescent. Leaves membranaceous, lanceolate to oblong-ovate, penninerved, 15 to 17 cm long, 4 to 9 cm wide, the base obtuse or rounded and slightly inequilateral, the apex slenderly acuminate; lateral nerves about 9 on each side of the midrib, distinct, ascending, somewhat curved; petioles 10 to 12 mm long. Staminate spikes cylindric, rather slender, black when dry, 5 to 7 cm long, about 3 mm in diameter, their peduncles 10 to 12 mm

in length, sparingly pubescent. Bracts peltate, about 1 mm in diameter. Anthers apparently 2.

SAMAR, Catubig River, *Bur. Sci.* 24278 Ramos, March 13, 1916, on trees in damp forests at low altitudes.

A species belonging in the group with *Piper penninerve* C. DC. and most closely allied to *Piper longilimbum* C. DC., from which it is distinguished by its smaller, caudate-acuminate leaves and by its staminate spikes being but half as long as in the latter species.

PIPER ELMERI sp. nov. § *Eupiper*.

Frutex dioicus, scandens, ramis circiter 1 cm diametro; foliis chartaceis ad subcoriaceis, late ovatis, aequilateralibus, basi profunde cordatis, 10- vel 12-plinerviis, apice acutis vel acuminate, usque ad 30 cm longis, subtus molliter pubescens; spicis ♂ usque ad 25 cm longis, circiter 4 mm diametro, bracteis pubescens, peltatis, 2.5 ad 3.5 mm longis; spicis ♀ usque ad 25 cm longis, cylindricis, densis; fructibus pedicellatis, ovoideis, 7 ad 9 mm longis, pedicellis usque ad 1.5 cm longis.

A coarse, woody, dioecious vine, the branches up to 1 cm in diameter, the older ones somewhat angled, rugose and brownish when dry. Leaves chartaceous to subcoriaceous, broadly ovate, 15 to 30 cm long, 11 to 23 cm wide, equilateral or nearly so, the base deeply cordate, 10- or 12-plinerved, the sinus rather narrow up to 4 cm deep, the basal lobes broadly rounded, apex acute or somewhat acuminate, the upper surface glabrous, shining, olivaceous, the lower surface softly pubescent; nerves prominent, the reticulations distinct; petioles up to 6 cm in length. Inflorescences simple, leaf-opposed, the staminate ones up to 25 cm long, about 4 mm in diameter, their peduncles 1.5 to 2 cm long. Staminate flowers numerous, the stamens 2, about 2 mm long, the bracts peltate, oblong-ovate, obtuse, pubescent, 2.5 to 3.5 mm long. Pistillate inflorescences up to 20 cm long or in fruit up to 25 cm in length, the rachis rather stout, cylindric, about 5 mm in diameter, the flowers numerous, crowded, sessile or subsessile, the ovary ovoid to elliptic, glabrous, about 2 mm long, the stigmas 3 or 4, sessile, the pedicels increasing in length immediately after anthesis and in fruit up to 1.5 cm long, spreading, the fruits ovoid, yellowish-red when fresh, somewhat wrinkled and usually black when dry, 7 to 9 mm long, the rachis with numerous unfertilized flowers in addition to those which develop into fruits.

SAMAR, Catubig River, *Bur. Sci.* 24256 Ramos (type), February 10, 1916. LUZON, Sorsogon Province, Mount Pokdal,

Bur. Sci. 23490 Ramos, August 3, 1915, with staminate flowers and the local Bikol name *buyong halas*: Laguna Province, Mount Maquiling, *For. Bur.* 26751 Mabesa, March, 1917, *Elmer* 18059, June, 1917. In damp forests at low and medium altitudes, ascending to 450 meters on Mount Maquiling.

A remarkable species not at all resembling any previously described form, easily recognizable by its broadly ovate, deeply cordate, equilateral leaves which are softly pubescent beneath; by its rather stout, cylindric, elongated spikes and their pubescent bracts; and by its large, long-pedicelled fruits.

ULMACEAE

CELTIS Linnaeus

CELTIS ASPERIFOLIA sp. nov.

Arbor magna, plus minusve pubescens; foliis tenuiter chartaceis, scaberulis, ovatis, integris, 5 ad 8 cm longis, acuminatis, basi inaequilateralibus, 3-nerviis, oblique truncatis ad rotundatis vel acutis; inflorescentiis pubescens, usque ad 5 cm longis, inferioribus δ superioribus σ , sepalis et staminibus 5, ovario pubescente.

A tree, about 25 m high, more or less pubescent. Leaves thinly chartaceous, rather scabrous, both surfaces with scattered, very short hairs, ovate, entire, 5 to 8 cm long, 3 to 5 cm wide, the base inequilateral, 3-nerved, somewhat oblique-truncate to rounded or even shallowly cordate, the younger leaves sometimes acute, apex acuminate; nerves slender, including the basal pair usually 3 on each side of the midrib; petioles pubescent, about 5 mm long. Inflorescences axillary and from the axils of fallen leaves, the latter usually wholly staminate, the former with both male and perfect flowers, cinereous-pubescent, up to 5 cm long. Male flowers sessile, somewhat glomerate on the branchlets, 5-merous, about 4 mm in diameter, the sepals distinctly pubescent, oblong-obovate, 2 mm long. Stamens equaling the sepals. Perfect flowers fewer than the male, sessile or short-pedicelled, the sepals 5, elliptic to oblong-elliptic, 2 to 2.5 mm long. Ovary oblong-ovoid, pubescent, the style arms forked. Stamens 5, filaments 2 mm long.

MINDANAO, Davao Province, Santa Cruz, *For. Bur.* 27562 De Mesa, May 2, 1919, in sandy soil, altitude about 70 meters, with the local Tagakaolo name *sikim*.

This species does not appear to be very closely allied to any previously described form. It is easily distinguished among the Oriental species with entire leaves by its indumentum and

its scabrous leaves. The collector gives the height of the tree as 25 meters with a trunk diameter of 1 meter.

MORACEAE

PHYLLOCHLAMYS Bureau

PHYLLOCHLAMYS TAXOIDES (Heyne) Koord. Exkursionsfl. Java 2 (1912) 89, var. PARVIFOLIA var. nov.

A rigid, branched, spiny shrub, 1 to 3 m high, entirely glabrous. Leaves chartaceous, oblong to elliptic-oblong or oblong-lanceolate, entire or with one or two teeth near their tips, acute to slightly acuminate, 2 to 4 cm long, 1 to 2.3 cm wide, the nerves not prominent. Pistillate flowers solitary, their pedicels about 4 mm long, each with a pair of bracteoles at about the middle, these ovate, obtuse, about 1 mm long. Sepals 4, in anthesis 4 to 8 mm long, lanceolate to oblong-lanceolate, not reticulate, slenderly acuminate, pale-green when fresh.

PALAWAN, Lake Manguao, Merrill 9482, April 27, 1913, on steep, dry, forested banks, altitude about 70 meters.

This is the first record for *Phyllochlamys* as Philippine, the form above described differing from the typical Indian *P. taxoides* (Heyne) Koord. (*P. spinosa* Bureau) in its much smaller, not prominently nerved, entire or only slightly toothed leaves. It may ultimately prove to be specifically distinct, as it is rather different from the single Indian specimen I have for examination, Wight 817. The species is widely distributed in India, but is reported from the Malay Archipelago only from Timor.

PROTEACEAE

HELICIA Lourseiro

HELICIA PAUCINERVIA sp. nov.

Arbor parva glabra; foliis coriaceis, oblongo-ellipticis, utrinque angustatis, basi acutis vel leviter decurrentibus, apice obtusis vel obtuse acuminatis, usque ad 14 cm longis, sursum distanter dentatis, vel integris, pagina superiore valde nitidis, nervis utrinque circiter 5, perspicuis; racemis lateralibus, e axillis defoliatis, circiter 20 cm longis; floribus solitariis vel binis, 2 cm longis.

A glabrous tree, about 5 m high, the branches dark reddish-brown. Leaves coriaceous, oblong-elliptic, narrowed to the acute or somewhat decurrent base and to the obtuse or bluntly acuminate apex, 10 to 14 cm long, 4.5 to 6 cm wide; the margins distantly and rather coarsely toothed above or sometimes entire,

the upper surface brownish-olivaceous, strongly shining, the lower surface dull, paler; lateral nerves about 5 on each side of the midrib, prominent; petioles about 1 cm long. Racemes solitary, lateral, in the axils of fallen leaves, about 20 cm long. Flowers white, solitary or paired, 2 cm long, their pedicels 2 to 3 mm long, when in pairs free nearly to the base. Perianth lobes 4, the somewhat enlarged tips narrowly oblong, about 3 mm long and 1.2 mm wide. Hypogynous scales more or less united into a prominent white disk about 1 mm high.

MINDANAO, Surigao Province, *Bur. Sci.* 34610 *Ramos & Pascasio*, April 25, 1919, on river banks at the iron deposit on the northeast coast, altitude about 300 meters.

A species closely allied to *Helicia oligophlebia* Merr. but with larger leaves and flowers. It is possible that *Bur. Sci.* 34621 *Ramos & Pascasio* from the same locality represents the same species. This specimen, however, is in fruit, and the leaves are relatively narrower and are wholly entire.

ARISTOLOCHIACEAE

BRAGANTIA Loureiro

BRAGANTIA BREVIPES sp. nov.

Suffrutex simplex, erectus, 0.5 m altus, leviter pubescens; foliis subcoriaceis, oblongo-ellipticis ad elliptico-ovatis, 11 ad 17 cm longis, basi obtusis ad rotundatis, 3-nerviis, apice obtusis ad rotundatis, plerumque minute apiculatis, breviter petiolatis, petiolo 5 ad 8 mm longo; racemis basilaribus, solitariis, 4 ad 12 cm longis, bracteis lineari-lanceolatis; floribus circiter 12 mm diametro, hirsutis, lobis late ovatis, reticulatis; capsulis tenuis, leviter torulosus, circiter 4 cm longis et 4 mm diametro.

An erect, small undershrub, up to 50 cm high, the stems sulcate when dry, grayish, 5 mm in diameter or less, solitary or 2 or 3 from the same root, more or less cinereous-pubescent as are the leaves on the lower surface. Leaves subcoriaceous, grayish or olivaceous when dry, oblong-elliptic to elliptic-ovate, 11 to 17 cm long, 6 to 10 cm wide, base rounded to obtuse, 3-nerved, the apex rounded or obtuse and usually minutely apiculate; lateral nerves above the basal pair about 5 on each side of the midrib, ascending, distinct on the lower surface as are the close reticulations; petioles 5 to 8 mm long. Racemes basal, solitary, the rachis 4 to 12 cm long, the bracts linear-lanceolate, pubescent, about 7 mm in length. Flowers about 12 mm in diameter, somewhat hirsute, yellowish, the perianth tube broadly cup-shaped or ovoid, about 4 mm long, the limb spreading, the

lobes broadly ovate, reticulate, 6 mm long and 8 mm wide, stamens 6, free, the filaments about 1 mm in length. Capsules slender, somewhat torulose when dry, about 4 cm long and 4 mm in diameter.

MINDANAO, Surigao Province, *Bur. Sci.* 34811 (type), 34369 *Ramos & Pascasio*, April and May, 1919, in forests along small streams at low altitudes. To this species I also refer *Merrill* 10490 from Alabat and *Bur. Sci.* 13370 *Ramos* from Tayabas Province, Luzon, both of which were originally identified as *Bragantia affinis* Planch.

The alliance of this species is manifestly with *Bragantia affinis* Planch., a species definitely known only from Panay. It is distinguished from the latter especially by its much shorter petioles.

MENISPERMACEAE

FIBRAUREA Loureiro

FIBRAUREA CHLOROLEUCA Miers in *Ann. Nat. Hist.* III 13 (1864) 489; Diels in *Engl. Pflanzenreich* 46 (1910) 120, f. 43.

DINAGAT, *Bur. Sci.* 35224, 35229 *Ramos & Pascasio*, May 12, 1919, in forests along small streams at low altitudes.

This is the first record of this genus as Philippine, the specimens cited above coming well within the range of variation of Miers's species as represented by ample material before me from Borneo, Sumatra, Java, and the Malay Peninsula, although the inflorescences are 30 cm in length; the longest inflorescence on the extra-Philippine material available for comparison is 25 cm, while Diels gives the maximum as 20 cm. The species extends from Burma, through Malaya, to Celebes.

MAGNOLIACEAE

TALAUMA Jussieu

TALAUMA RETICULATA sp. nov.

Arbor glabra, pedunculis ramulisque exceptis glabra; foliis anguste oblongis ad oblongo-oblancoatis, 24 ad 34 cm longis, 5 ad 7.5 cm latis, crasse coriaceis, nitidis, deorsum angustatis, basi cuneatis, apice acutis vel breviter acuminatis, nervis utrinque circiter 14, cum reticulis valde perspicuis; carpellis ut videtur paucis 1.5 ad 3 cm longis, 1 ad 1.5 cm latis, obtusis, haud rostratis.

A small tree, glabrous except the peduncles and very young branchlets, the latter about 5 mm in diameter. Leaves narrowly oblong to oblong-oblancoate, 24 to 34 cm long, 5 to 7.5

cm wide, thickly coriaceous, shining, narrowed below to the cuneate base and above to the acute or shortly acuminate apex; lateral nerves about 14 on each side of the midrib, distant, anastomosing, prominent, the reticulations very distinct on both surfaces; petioles stout, about 2 cm long. Fruits solitary, their peduncles about 5 cm long, appressed-pubescent, the rachis of the infructescence 5 to 6 cm long, the individual carpels apparently few, brown when dry, 1.5 to 3 cm long, 1 to 1.5 cm wide, their tips blunt, not at all prolonged into a beak.

DINAGAT, *Bur. Sci.* 35187 Ramos & Pascasio, May 12, 1919, in forests at low altitudes.

This species in its vegetative character resembles *Talauma angatensis* F.-Vill., but has narrower, differently shaped, more conspicuously reticulate leaves; it further differs from the latter species in its apparently few carpels which are merely blunt at their apices, not at all beaked.

ANNONACEAE

OXYMITRA Hooker f. and Thomson

OXYMITRA OLIGOPHLEBIA sp. nov.

Frutex scandens, ramulis floribusque exceptis glaber, ramis tenuibus; foliis chartaceis vel subcoriaceis, oblongis ad oblongo-lanceolatis, usque ad 10 cm longis, basi rotundatis, sursum angustatis, acutis vel leviter acuminatis, olivaceis, nitidis, subtus brunneis, nervis utrinque plerumque 5, tenuibus, distinctis; floribus extra-axillaribus, solitariis, circiter 3 cm longis, lanceolatis, ferrugineo-pubescent, longetenuiterque pedicellatis.

A scandent shrub, glabrous except the very slightly pubescent branchlets and the rather densely ferruginous-pubescent flowers; the branches terete, slender, about 3 mm in diameter, shining, dark reddish-brown when dry. Leaves firmly chartaceous or subcoriaceous, oblong to oblong-lanceolate, 6 to 10 cm long, 2 to 3.5 cm wide, the base rounded, narrowed upward to the acute or slightly acuminate apex, the upper surface olivaceous, shining, the lower surface brownish; lateral nerves usually 5 on each side of the midrib, slender, distinct, curved, the reticulations not prominent; petioles about 3 mm long. Flowers yellow, solitary, extra-axillary, about 3 cm long, lanceolate, acuminate, their pedicels up to 2.5 cm long, slender, sparingly pubescent with a small bract below the midrib. Calyx-lobes triangular-ovate, pubescent, acuminate, about 3 mm long. Outer petals when young densely ferruginous-pubescent, the indumentum more or less scattered in age.

BUCAS GRANDE, *Bur. Sci.* 35068 Ramos & Pascasio, June 10, 1919, in dry forests at low altitudes.

This species is probably more closely allied to *Oxymitra paucinervia* Merr. than to any other species, but differs in its fewer-nerved leaves which are not at all glaucous beneath.

GONIOTHALAMUS Hooker f. and Thomson

GONIOTHALAMUS PANAYENSIS sp. nov.

Arbor parva, ramulis junioribus et floribus plus minusve pubescens; foliis chartaceis vel subcoriaceis, oblongis, 15 ad 30 cm longis, basi acutis, apice tenuiter acuminatis, nervis utrinque circiter 12, perspicuis; floribus solitariis vel fasciculatis e truncis vel ramis majoribus, breviter pedicellatis, circiter 2.5 cm longis; petalis exterioribus lanceolatis, crasse coriaceis sursum angustatis, utrinque plus minusve pubescens; petalis interioribus circiter 1.3 cm longis, conniventibus.

A tree, about 5 m high, the very young branchlets sparingly pubescent, the flowers usually densely so, otherwise glabrous. Leaves chartaceous or subcoriaceous, oblong, shining, 15 to 30 cm long, 4 to 10 cm wide, the base acute, apex slenderly acuminate; lateral nerves about 12 on each side of the midrib, prominent, the reticulations rather lax, distinct; petioles 1 to 2 cm long. Flowers yellowish, solitary or fascicled on the trunk and larger branches, rarely axillary on the younger branches, their pedicels densely pubescent, about 4 mm long, usually subtended by a pair of small bracts. Calyx about 1.3 cm in diameter, the lobes ovate, acute or somewhat acuminate, more or less pubescent. Outer 3 petals lanceolate, apparently fleshy, thickly coriaceous when dry, about 2.5 cm long and 8 mm wide, narrowed upward to the acute or slightly acuminate apex, slightly constricted toward the base, both surfaces more or less pubescent with short, appressed, shining, brownish hairs. Inner petals about 1.3 cm long, appressed-pubescent, connivent.

PANAY, Capiz Province, Libacao and Mount Salibongbong, *Bur. Sci.* 35290 (type), 35575 Martelino & Edaño, June, 1919, in forests.

This species is distinctly allied to *Goniothalamus amuyon* (Blanco) Merr., from which it is readily distinguished by its larger, slenderly acuminate leaves, and smaller flowers.

PSEUDUVARIA Miquel

PSEUDUVARIA CAUDATA sp. nov.

Arbor parva, dioeca, partibus junioribus floribusque exceptis glabra, ramis tenuibus; foliis lanceolatis, 5 ad 14 cm longis,

nitidissimis, basi acutis, apice caudato-acuminatis, nervis utrinque 7 ad 10, perspicuis; floribus axillaribus, petalis exterioribus late ovatis, obtusis, 2.5 mm longis, interioribus arcuatis, 8 ad 9 mm longis; staminibus circiter 40.

A tree, about 7 m high, glabrous except the younger parts and the flowers. Branches slender, terete, nearly black when dry, glabrous, the branchlets sparingly pubescent. Leaves lanceolate, 6 to 14 cm long, 1.5 to 3.5 cm wide, chartaceous, strongly shining when dry, base acute, narrowed upward to the slenderly caudate-acuminate apex, the lower surface slightly pubescent on the midrib; lateral nerves 7 to 10 on each side of the midrib, prominent, curved-ascending, anastomosing; petioles 3 to 5 mm long. Flowers axillary, greenish, solitary or in pairs, their pedicels 7 to 10 mm long, finely pubescent, bearing a small bract at the middle 1 mm long or less and wider than long. Sepals broadly ovate, rounded, pubescent, about 1.8 mm in diameter. Outer 3 petals broadly ovate, rounded or obtuse, pubescent, about 2.5 mm long; inner 3 petals arched, 8 to 9 mm long, pubescent; the limb 5 mm wide, 2 to 3 mm long, the claw 5 to 6 mm in length. Stamens about 40, densely crowded, less than 1 mm long.

LUZON, Camarines Province, Sipocot, *For. Bur.* 25533 *Cenabre*, May 15, 1916, on forested slopes, altitude about 80 meters.

A species well characterized in this small genus by its lanceolate, caudate-acuminate leaves. The specimen presents only male flowers.

POPOWIA Endlicher

POPOWIA LANCEOLATA sp. nov.

Arbor parva, ramis tenuibus, glabris, ramulis ferrugineo-pubescentibus; foliis chartaceis vel subcoriaceis, lanceolatis, 4 ad 6 cm longis, 1 ad 1.5 cm latis, utrinque subaequaliter angustatis, basi cuneatis, apice tenuiter acuminatis, supra glabris, subtus ad costa nervisque adpresse pubescens; nervis utrinque plerumque 5, tenuibus, adscendentibus, reticulis obsoletis; fructibus globosis circiter 8 mm diametro.

A tree, about 8 m high, the branches and branchlets terete, the former glabrous, nearly black when dry, slender, the latter more or less ferruginous-pubescent. Leaves lanceolate, firmly chartaceous or subcoriaceous, 4 to 6 cm long, 1 to 1.5 cm wide, subequally narrowed to the cuneate base and to the rather slenderly acuminate apex, the upper surface glabrous, the lower surface paler and appressed-pubescent on the midrib and nerves; lateral nerves slender, ascending, usually 5 on each side of the

midrib, the reticulations obsolete; petioles about 2 mm long. Very young flowers in axillary, short, few-flowered cymes, the pedicels, sepals, and petals ferruginous-pubescent. Fruits globose, sparingly pubescent, about 8 mm in diameter.

DINAGAT, *Bur. Sci.* 35186 Ramos & Pascasio, May 12, 1919, in forests at low altitudes.

A species manifestly allied to *Popowia polyandra* (Presl) Merr., which in turn is perhaps not specifically distinct from the Malayan *P. pisocarpa* Endl. The present species is strongly characterized by its narrow, lanceolate, slenderly acuminate leaves.

MYRISTICACEAE

HORSFIELDIA Willdenow

HORSFIELDIA ACUMINATA sp. nov. § *Irya*, *Euirya*.

Arbor, ramulis junioribus inflorescentiisque exceptis glabra, ramulis teretibus, haud longitudinaliter lineatis; foliis chartaceis, lanceolatis ad oblongo-lanceolatis, 15 ad 20 cm longis, basi acutis, apice tenuiter acuminatis, nervis utrinque circiter 16, tenuibus, distinctis; inflorescentiis ♂ axillaribus, paniculatis, usque ad 12 cm longis, ferrugineo-pubescent, floribus breviter pedicellatis, confertis, circiter 1.5 mm diametro.

A tree, glabrous except the very youngest branchlets and the inflorescences which are more or less ferruginous-pubescent. Branches terete, reddish-brown, lenticellate, the twigs without longitudinal lines. Leaves chartaceous, lanceolate to oblong-lanceolate, 15 to 20 cm long, 3.5 to 4 cm wide, somewhat olivaceous, shining, the base acute, the apex slenderly acuminate; lateral nerves about 16 on each side of the midrib, slender, distinct; petioles about 8 mm long. Staminate inflorescences axillary, paniculate, up to 12 cm long, branched from near the base, the primary branches up to 4.5 cm in length, the flowers somewhat crowded on the ultimate branchlets, the rachis, branches, and branchlets when young densely ferruginous-pubescent, the indumentum somewhat deciduous. Staminate flowers globose, glabrous, about 1.5 mm in diameter, the perianth 2-valved, their pedicels up to 1 mm long. Anther cells short, on the margin of the disk, their tips free.

MINDANAO, Davao Province, Astorga, *For. Bur.* 27507 *De Mesa*, April 23, 1919, in rich, level, forested areas, altitude about 20 meters, with the local Maguindanao name *kaná*.

A species belonging in the group with *Horsfieldia irya* Warb.

but distinguished from it and its congeners by a number of characters.

HORSFIELDIA RAMOSII sp. nov.

Arbor parva, ramulis et inflorescentiis et foliis subtus secus costam castaneo-stellato-pubescent, ramulis ultimis haud lineatis; foliis oblongis ad oblongo-lanceolatis, subcoriaceis, 13 ad 17 cm longis, basi acutis, apice tenuiter acute acuminatis, nervis utrinque circiter 15, reticulis laxis, subobsoletis; inflorescentiis ♀ axillaribus, 2 ad 3 cm longis, paucifloris, racemosis vel depauperato-paniculatis; floribus globosis, 2 mm diametro.

A tree, the branchlets and lower surface of the leaves along the midrib stellate-pubescent with short, castaneous hairs, the indumentum somewhat deciduous, the branches glabrous, the ultimate branchlets without longitudinal lines. Leaves oblong to oblong-lanceolate, subcoriaceous, 13 to 17 cm long, 4 to 6 cm wide, narrowed below to the acute or somewhat decurrent base, and above to the slenderly and sharply acuminate apex; lateral nerves about 15 on each side of the midrib, obscurely anastomosing, the reticulations lax, indistinct or obsolete; petioles 8 to 12 mm long, stellate-pubescent when young, becoming glabrous. Pistillate inflorescences axillary and from the axils of fallen leaves, stellate-pubescent, 2 to 3 cm long, few-flowered, racemose or depauperate-paniculate, the primary branches when present few, about 3 mm long. Perianth glabrous, globose or ovoid, 2-valved, about 2 mm in diameter, the pedicels about 2 mm long.

BUCAS GRANDE, *Bur. Sci.* 35047 Ramos & Pascasio, June 11, 1919, in dry forests at low altitudes.

This species is apparently most closely allied to *Horsfieldia obscurinervia* Merr., but is readily distinguished by its castaneous, stellate indumentum on the branchlets, inflorescences, and lower surface of the leaves. The two species are not, however, directly comparable, as of the latter the staminate flowers are known and of the species described above only the pistillate ones.

MYRISTICA Linnaeus

MYRISTICA LAXIFLORA sp. nov.

Arbor, subtus foliis et ramulis et inflorescentiis ferrugineo-pubescent; foliis lanceolatis ad oblongo-lanceolatis, chartaceis, 10 ad 15 cm longis, utrinque angustatis, basi acutis, apice acutis vel leviter acuminatis, supra glabris, nitidis, subtus subcupreis,

nervis utrinque circiter 12, tenuibus, reticulis subobsoletis; inflorescentiis ♂ axillaribus, paniculatis, laxis, 4.5 ad 6 cm longis; floribus subumbellatim dispositis, pedicellatis, ellipsoideis, 4 mm longis; fructibus ellipsoideis, circiter 4.5 cm longis, dense ferrugineo-puberulis.

A tree, the branchlets, inflorescences, and leaves on the lower surface ferruginous-pubescent or puberulent with dense short hairs. Branches reddish-brown, glabrous. Leaves lanceolate to oblong-lanceolate, chartaceous, 10 to 15 cm long, 2.5 to 4.5 cm wide, narrowed below to the acute base and above to the acute or somewhat acuminate apex, the upper surface glabrous, smooth and shining when dry, the lower often somewhat cupreous from the rather dense, close indumentum; lateral nerves about 12 on each side of the midrib, slender and not prominent, scarcely impressed on the upper surface, the reticulations nearly obsolete; petioles 1 to 2.5 cm long, when young pubescent, eventually glabrous. Staminate inflorescences axillary, paniculate, rather lax, 4.5 to 6 cm long, ferruginous-pubescent, the primary branches 1.5 cm long or less, the flowers rather laxly and umbellately arranged at the tips of the branches, their pedicels 4 to 5 mm long. Perianth about 4 mm long, pubescent, ellipsoid, 3-lobed, anthers about 8, the anther-mass about 1.5 mm long, borne on a 1-mm long column; bracteole at the base of the calyx reniform, obscure, 0.4 mm long or less. Fruit ellipsoid, ferruginous and rather densely puberulent, when dry smooth, about 4.5 cm long, and the aril laciniate to the very base.

BASILAN, *Bur. Sci.* 15498 *Reillo* (type), August 14, 1912, in forests at low altitudes. TINAGO, *Ahern* 421, February to June, 1901, with the local name *dugan*.

A species belonging in the *littoralis* series, well characterized by its cupreous or ferruginous indumentum and by its rather large, lax, minutely bracteolate, staminate inflorescences. *Ahern* 421 cited above is a fruiting specimen and was originally identified as *Myristica cumingii* Warb.

MYRISTICA CAGAYANENSIS sp. nov.

Arbor circiter 8 m alta, ramulis junioribus fructibusque ferrugineo-pubescentibus; foliis coriaceis, oblongis, 13 ad 18 cm longis, utrinque obtusis vel apice late obtuseque acuminatis, nervis utrinque circiter 18, reticulis subobsoletis; fructibus ellipsoideis, circiter 7 cm longis, minute ferrugineo-pubescentibus, in siccitate rugosis, seminibus circiter 4 cm longis.

A tree, about 8 m high, the very tips of the branchlets and

the fruits ferruginous-pubescent, otherwise glabrous (inflorescences unknown). Leaves coriaceous, oblong, 13 to 18 cm long, 4 to 5.5 cm wide, the base obtuse to rounded, the apex obtuse or very broadly obtuse-acuminate, the lower surface distinctly paler than the upper, sometimes slightly glaucous; lateral nerves about 18 on each side of the midrib, somewhat impressed on the upper surface, slightly projecting on the lower surface, the reticulations nearly obsolete; petioles 1.5 to 2 cm long. Fruits solitary, ellipsoid or cylindric, brown and minutely ferruginous-pubescent when mature, rugose, about 7 cm long, the seed smooth, shining, about 4 cm long, the aril lacinate nearly to the base.

LUZON, Cagayan Province, San Vicente, *For. Bur.* 24277 *Bernardo*, August 12, 1915, in dense forests at low altitudes with the local Negrito name *ñgabñgab*.

A species apparently belonging with *Myristica philippensis* Lam. but with much smaller, entirely glabrous leaves.

KNEMA Loureiro

KNEMA ACUMINATA sp. nov.

Arbor circiter 12 m alta, ramulis fructibusque ferrugineo-pubescentibus; foliis subcoriaceis, lanceolatis ad oblongo-lanceolatis, 3 ad 13 cm longis, basi acutis, sursum angustatis, tenuiter acuminatis, supra subolivaceis, nitidis, subtus pallidioribus, vix glaucescentibus, nervis utrinque 8 ad 12, perspicuis; fructibus subglobosis ad ovoideis, 1.5 ad 2 cm longis.

A tree, about 12 m high, the branchlets and fruits ferruginous-pubescent. Leaves subcoriaceous, lanceolate to oblong-lanceolate, entire, 9 to 13 cm long, 2.5 to 4.5 cm wide, the base acute or somewhat decurrent-acuminate, the apex slenderly acuminate, the upper surface somewhat olivaceous, glabrous, the lower pale but scarcely glaucous, glabrous or nearly so; lateral nerves distinct, 8 to 12 on each side of the midrib, the reticulations fine, rather close; petioles 1 to 1.5 cm long. Fruits subglobose to ovoid, 1.5 to 2 cm long, ferruginous-pubescent, their pedicels about 7 mm long, usually 3 borne on a common, very short, axillary peduncle at most 5 mm in length.

LUZON, Isabela Province, Ilagan, *For. Bur.* 11266 *Klemme*, May 18, 1908, in dense level forests at low altitudes.

A species probably most closely allied to *Knema vidalii* Warb., but easily distinguished by its slenderly acuminate, few-nerved leaves.

LAURACEAE

CRYPTOCARYA R. Brown

CRYPTOCARYA OLIGOCARPA sp. nov.

Frutex vel arbor parva, partibus junioribus exceptis glabra; foliis coriaceis, oblongo-ellipticis ad oblongo-ovatis, 6 ad 10 cm longis, apice breviter obtuseque acuminatis, basi acutis vel rotundatis, utrinque laevis, supra nitidis, subtus albido-glauciscentibus, nervis utrinque circiter 7, perspicuis; infructescentiis axillaribus, spicatus, usque ad 1.5 cm longis, fructibus paucis ellipsoideis, nitidis, glabris, circiter 1 cm longis.

A shrub or small tree, glabrous except the younger parts. Branches terete, glabrous, usually brownish, the very young branchlets appressed-pubescent, soon becoming glabrous. Leaves coriaceous, oblong-elliptic to oblong-ovate, 6 to 10 cm long, 2.5 to 5 cm wide, the apex shortly and obtusely acuminate, the base acute to rounded, the upper surface smooth, shining, pale greenish when dry, the lower surface glaucous; lateral nerves about 7 on each side of the midrib, prominent on the lower surface, brown in contrast with the glaucous epidermis, the reticulations slender, not prominent; petioles 8 to 10 mm long, glabrous. Infructescences in the uppermost axils, usually reduced to a simple spike, the axils 1.5 cm long or less. Fruits few, somewhat ellipsoid, smooth, shining, glabrous, nearly black when dry, about 1 cm long.

MINDANAO, Surigao Province, *Bur. Sci.* 34716 Ramos & Pascasio, June 14, 1919, at the iron deposit on the northeast coast along streams at low altitudes.

This species is apparently most closely allied to *Cryptocarya ramosii* Merr., but the leaves and fruits are smaller and the former are not at all foveolate, both surfaces being entirely smooth.

PITTOSPORACEAE

PITTOSPORUM Banks

PITTOSPORUM OBSCURINERVE sp. nov.

Arbor parva, ramulis junioribus leviter ferrugineo-pubescentibus; foliis verticillatis, coriaceis, rigidis, oblongis-obovatis ad oblanceolatis, 7 ad 9 cm longis, acutis vel breviter acuminatis, basi tenuiter cuneatis; nervis utrinque circiter 7, tenuibus, obscuris; capsulis subumbellatis, oblongis 2-valvis, circiter 1.8 cm longis.

A glabrous tree, about 4 m high, the very young branchlets

more or less ferruginous-pubescent. Leaves verticillate, coriaceous, rigid, brownish-olivaceous and slightly shining when dry, oblong-obovate to oblanceolate, 7 to 9 cm long, 1.5 to 3.5 cm wide, the apex acute or shortly and acutely acuminate, narrowed below to the slenderly cuneate base; lateral nerves about 7 on each side of the midrib, very slender, obscure, obsolete on the upper surface; petioles about 1 cm long. Infructescences terminal, subumbellate, their peduncles up to 4 cm long slightly pubescent, the pedicels 1 cm long or less. Capsules yellow when fresh, fleshy, glabrous, oblong, about 1.8 cm long, 2-valved, the valves black and rugose when dry, spreading, obtuse.

MINDANAO, Surigao Province, *Bur. Sci.* 34441 Ramos & Pascasio, April 25, 1919, along small streams at the iron deposit on the northeast coast, altitude about 590 meters.

A species belonging in the group with *Pittosporum odoratum* Merr., but readily distinguishable by its thickly coriaceous, rigid, very obscurely nerved leaves.

PITTOSPORUM EUPHLEBIUM sp. nov.

Frutex vel arbor parva, ramulis junioribus leviter ferrugineo-pilosis; foliis verticillatis, chartaceis, oblongis ad oblongo-oblanceolatis, nitidis, acute acuminatis, basi cuneatis, nervis utrinque circiter 5, subtus cum reticulis valde perspicuis; capsulis terminalibus, solitariis anguste ellipsoideis, 2-valvis, circiter 3 cm longis.

A shrub or small tree, glabrous except the very young parts which are sparingly ferruginous-pilose, the indumentum deciduous, branchlets slender, terete, the internodes 7 to 14 cm long. Leaves verticillate, chartaceous, oblong to oblong-oblanceolate, olivaceous, shining, the apex sharply acuminate, the base cuneate, 7 to 12 cm long, 2 to 3 cm wide; lateral nerves about 5 on each side of the midrib, distant, very prominent on the lower surface, projecting, laxly anastomosing, the primary reticulations lax, distinct. Capsules terminal, solitary, narrowly ellipsoid and nearly smooth when dry, 2-valved, about 3 cm long, their peduncles about 1.5 cm in length.

PANAY, Capiz Province, Libacao, *Bur. Sci.* 35416 Martelino & Edaña, May 30, 1919, on open forested slopes at low altitudes.

By its solitary, terminal capsules this species apparently belongs in the group with *Pittosporum glaberrimum* Merr. from which it is distinguished by its larger leaves and capsules and by its nerves and lax reticulations being prominently raised on the lower surface.

ROSACEAE

ROSA Linnaeus

ROSA LUZONIENSIS sp. nov. § *Synstylae*.

Frutex scandens, usque ad 4 m altus, glaber, ramis aculeatis, aculeis sparsis, curvatis, tenuibus, usque ad 6 mm longis; foliis 3 ad 5 cm longis, 5- vel 7-foliatis, foliolis parvis, elliptico-ovatis, leviter acuminatis, 5 ad 15 mm longis, inermis vel subtus ad costa aculeis paucis armatis; stipulis adnatis, margine pectinatis atque glandulis capitatis paucis instructis; floribus plerumque solitariis, calycis tubo glabro, lobis oblongo-lanceolatis, usque ad 10 mm longis, intus pilosis, extus glabris, margine parce capitato-glandulosis, atque laciniis tenuibus 2 vel 3 utrinque instructis; stylis circiter 15, glabris, connatis, 3 ad 5 mm longis.

A scandent shrub, attaining a length of 4 m, glabrous except the inner surface of the sepals. Branches armed with slender, somewhat curved spines 4 to 6 mm in length. Leaves pinnate, 5- or 7-foliolate, 3 to 5 cm long, glabrous, the leaflets small, elliptic-ovate, acute or acuminate, or the lower ones sometimes obtuse, sharply serrate, 5 to 15 mm long, the midrib beneath unarmed or with a few short spines; stipules adnate, pectinate, the outer margins also somewhat capitate-glandular. Flowers white, mostly solitary, about 3 cm in diameter, their pedicels unarmed, not at all glandular, usually about 1 cm long. Calyx-tube glabrous, oblong-obovoid, about 6 mm long; lobes oblong-lanceolate, about 10 mm long, externally glabrous, inside pubescent, the margins sparingly capitate-glandular and with two or three, slender, 1.5 to 2 mm long lacinae on each side. Petals broadly obovate, about 17 mm long, retuse. Stamens indefinite, their filaments glabrous, up to 5 mm long. Styles about 15, glabrous, more or less united, 3 to 5 mm long.

LUZON, Benguet Subprovince, Pauai, *Bur. Sci.* 31876 Santos (type), May 29, 1918, *Bur. Sci.* 4300 Mearns, July, 1907, *Bur. Sci.* 8336 McGregor, June, 1909, on slopes in thickets near the mossy forest, altitude about 2,300 meters, with the local name *paucan*.

This form has been confused with *Rosa multiflora* Thunb., from which, among other characters, it is distinguished by its much smaller leaves and leaflets; in being entirely glabrous, except for the sepals; in the absence of capitate glands on the branchlets and vegetative parts; and in its usually solitary flowers. It is apparently closely allied to the Formosan *Rubus transmorrisonensis* Hayata.

ROSA PHILIPPINENSIS sp. nov. § *Synstylae*.

Rosa multiflora Vidal Rev. Pl. Vasc. Filip. (1886) 123; Merr. in Philip. Journ. Sci. 5 (1910) Bot. 352, non Thunb.

Frutex suberectus vel scandens, 1 ad 4 m altus, ramis parce aculeatis, ramulis perspicue capitato-glandulosis; foliis 5- ad 9-foliolatis, 9 ad 12 cm longis, glabris, foliolis chartaceis, oblongo-ellipticis ad oblongo-ovatis, 3 ad 5 cm longis, serratis, plerumque acutis; stipulis adnatis, angustis, haud pectinatis, margine capitato-glandulosis; floribus numerosis, paniculatis, 3 ad 3.5 cm diametro, pedicellis calycibusque extus leviter hirsutis atque capitato-glandulosis, lobis oblongo-lanceolatis, caudato-acuminatis, usque ad 12 mm longis, intus cinereo-villosis, margine plerumque integris vel lobis angustis 1 vel 2 utrinque instructis; stylis connatis, hirsutis, circiter 5 mm longis.

A suberect or more or less scandent shrub, 1 to 4 m in height, nearly glabrous. Branches armed with scattered, stout, recurved spines about 4 mm in length, the branchlets conspicuously capitate-glandular as are the inflorescences and calyces. Leaves 5- to 9-foliolate, glabrous, 9 to 12 cm long, the rachis sparingly aculeate; leaflets chartaceous, oblong-elliptic to oblong-ovate, mostly acute, 3 to 5 cm long, sharply serrate; stipules adnate, scarcely pectinate, narrow, their margins capitate-glandular, the linear, free, apical parts 3 mm long or less. Panicles terminal, ample, somewhat leafy, many-flowered, up to 20 cm in length, all parts capitate-glandular, the pedicels 2.5 to 4 cm long. Flowers white, 3 to 3.5 cm in diameter. Calyx-tube somewhat pubescent, glandular-capitate, about 5 mm long, the lobes oblong-lanceolate, caudate-acuminate, up to 12 mm long, pubescent and capitate-glandular outside, inside densely cinereous-pubescent, caudate-acuminate, entire or with one or two narrow lobes on each side. Petals obovate, retuse. Stamens indefinite. Styles hirsute, connate, about 5 mm long.

LUZON, Benguet Subprovince, Baguio and vicinity, Elmer 5794 (type), Merrill Phil. Pl. 882, Bur. Sci. 2519, 4290 Mearns, Sandkuhl 371, Santos 14: Bontoc Subprovince, Vanoverbergh 50. In thickets, gulches, etc., in the pine region, altitude 1,200 to 1,700 meters.

This species has long been confused with *Rosa multiflora* Thunb., the typical form of which is apparently confined to Japan and Korea. A more critical examination of the Philippine material than has hitherto been made shows that this form is distinguishable from Thunberg's species in numerous charac-

ters and is really more closely allied to *Rosa wichuraiana* Crépín than to *R. multiflora* Thunb.

Var. *DEPAUPERATA* var. nov.

A typo differt foliis minoribus, foliolis 1 ad 3 cm longis.

LUZON, Benguet Subprovince, *Williams* 972, *Clemens* 9106, *Elmer* 8416, *Merrill* 4643, 6532, *Topping* 32, *Bur. Sci.* 3376 *Mearns*, *Bur. Sci.* 5568, 5821 *Ramos*, *For. Bur.* 18168 *Curran*, *Zschokke*, & *Merritt*: Bontoc Subprovince, *For. Bur.* 14462 *Darling*: Lepanto Subprovince, *For. Bur.* 5746 *Klemme*: Ifugao Subprovince, *Bur. Sci.* 19653 *McGregor*.

In the same habitats as the typical form of the species but more abundant. The recorded local names are *pigit* in Bontoc and *kuyaob* in Lepanto.

CONNARACEAE

CONNARUS Linnaeus

CONNARUS CAUDATUS sp. nov.

Frutex scandens, inflorescentiis exceptis glaber, foliis usque ad 30 cm longis, 5-foliolatis, foliolis oblongo-ovatis ad oblongo-lanceolatis, nitidis, subcoriaceis, usque ad 17 cm longis, apice tenuiter caudato-acuminatis, basi obtusis et minutissime, peltatis, nervis utrinque plerumque 4, distinctis; infructescentiis leviter castaneo-pubescent, paniculatis, folliculis oblique obovoideis, extus glabris, intus pubescens, circiter 2.5 cm longis, apice rotundatis, oblique rugulosis vel striatis.

A woody vine, glabrous except the inflorescences. Leaves up to 30 cm long, pinnately 5-foliolate; leaflets oblong-ovate to oblong-lanceolate, olivaceous, shining, subcoriaceous, 7 to 17 cm long, 2.5 to 5 cm wide, the apex long and slenderly caudate-acuminate, the base obtuse and very minutely peltate; lateral nerves usually 4 on each side of the midrib, distinct, anastomosing, the reticulations lax. Infructescences peduncled, somewhat castaneous-pubescent, paniculate, the follicles obliquely obovoid, slightly compressed, about 2.5 cm long, the apex broadly rounded, the base acute, the remains of the style somewhat lateral, the valves brown when dry, rugulose or striate, glabrous externally or very slightly pubescent when young, inside more or less pubescent.

BUCAS GRANDE, *Bur. Sci.* 35059 *Ramos & Pascasio*, June 10, 1919, in dry forests at low altitudes.

In its follicle characters this species is similar to *Connarus*

neurocalyx Planch., but it differs radically from Planchon's species in its caudate-acuminate leaflets.

ELLIPANTHUS Hooker f.

ELLIPANTHUS LONGIFOLIUS sp. nov.

Arbor parva, ramulis et inflorescentiis et fructibus exceptis glaber; foliis anguste oblongo-lanceolatis, coriaceis, 23 ad 30 cm longis, 4 ad 6 cm latis, apice tenuiter acuminatis, basi late acutis, utrinque nec profunde foveolatis, nervis utrinque circiter 9, distantibus, distinctis; fructibus inaequilateralibus, oblongis, circiter 3 cm longis, acuminatis, deorsum angustatis, extus densissime castaneo-pubescentis.

A shrub or small tree, glabrous except the very young branchlets, inflorescences, and fruits. Branches terete, glabrous, reddish-brown. Leaves narrowly oblong-lanceolate, coriaceous, 23 to 30 cm long, 4 to 6 cm wide, shining when dry, the apex slenderly acuminate, the base broadly acute; lateral nerves about 9 on each side of the midrib, distant, distinct, anastomosing, the ultimate reticulations often distinct; both surfaces appearing shallowly foveolate; petioles 1.5 to 3 cm long. Infructescences axillary and from the axils of fallen leaves, the carpels either solitary or in pairs or threes on a common peduncle which is less than 1 cm in length. Follicles inequilateral, oblong, about 3 cm long and 1 cm wide, one side nearly straight, the other curved, apex acuminate, base narrowed into a 5 mm long pseudostalk, densely pubescent outside with short castaneous hairs.

DINAGAT, *Bur. Sci.* 35180 Ramos & Pascasio, May 12, 1919, on the forested banks of small streams at low altitudes.

A species belonging in the group with *Ellipanthus luzoniensis* Vid., but readily distinguished by its elongated narrow leaves.

LEGUMINOSAE

PITHECOLOBIUM Martius

PITHECOLOBIUM SESSILIFLORUM sp. nov.

Arbor parva, inflorescentiis perspicue ferrugineo-pubescentis, ramulis angulatis; foliis circiter 40 cm longis, pinnae plerumque 10-jugis, jugis intermediis usque ad 17 cm longis, apice 1-glandulosis; foliis circiter 15-jugis, rhomboideis vel oblique rhomboideis, valde inaequilateralibus, subcoriaceis, 1.5 ad 3.5 cm longis, acuminatis; paniculis usque ad 50 cm longis, floribus sessilibus, subumbellatim confertis, calycis dense ferrugineo-pubescentis, corolla 8 ad 9 mm longa, dense ferrugineo-pubescentis.

A small tree, about 4 m high, the inflorescences prominently ferruginous-pubescent on the younger parts, the plant otherwise nearly glabrous, the branchlets dark brown when dry, prominently angled. Leaves about 40 cm long, the pinnae usually about 10 pairs, the lowest 1 or 2 pairs usually much shorter than the others, the intermediate ones up to 17 cm long, the main rachis slightly pubescent as are the secondary ones, angular, and with a single prominent gland near the base, the secondary rachises with a single small gland at the base of the ultimate pair of leaflets; leaflets on the intermediate pinnae about 15 pairs, rhomboid or obliquely rhomboid, very inequilateral, the midrib diagonal, subcoriaceous, brown and strongly shining when dry, 1.5 to 3.5 cm long, 6 to 15 mm wide, acuminate, the lower surface very sparingly pubescent. Panicles terminal, ample, peduncled, up to 50 cm long, the flowers white, numerous, subumbellately crowded at the tips of the ultimate branchlets, sessile or nearly so, the subtending bracteoles obovate to oblong-obovate, somewhat acuminate, about 3 m long. Calyx about 4 mm long, densely ferruginous-pubescent, cup-shaped, the teeth triangular, acute, about 1 mm long. Corolla 8 to 9 mm long, densely ferruginous-pubescent, the lobes oblong-ovate, about 3.5 mm long. Ovary oblong-ovate to somewhat obovate, pubescent, 1.5 to 2 mm in length.

MINDANAO, Surigao Province, *Bur. Sci.* 34675 Ramos & Pascasio, June 15, 1919, along streams at low altitudes at the iron deposit on the northeast coast.

A species belonging in the group with *Pithecolobium clypearia* Benth. and in this group apparently most closely allied to *Pithecolobium contortum* Mart., from which it is readily distinguished, among other characters, by its very densely ferruginous-pubescent corollas.

ORMOSIA Jackson

ORMOSIA SURIGAENSIS sp. nov.

Arbor, ramulis junioribus inflorescentiisque dense ferrugineo-pubescent; foliis 11 ad 15 cm longis, foliolis 5 vel 7, coriaceis, oblongo-ovatis ad oblongo-ellipticis, olivaceis, nitidis, 5 ad 9 cm longis, basi late rotundatis, apice obtusis vel late obtuseque acuminatis; paniculis terminalibus, circiter 20 cm longis, e basi ramosis; calycis, dense ferrugineo-pubescent, lobis oblongis, obtusis, circiter 6 mm longis, vexilla violacea, late reniformi-orbicularis, appendicibus anterioribus carnosis, oblongis, 2.5 mm longis; ovulis plerumque 3.

A tree, the very young branchlets and inflorescences densely ferruginous-pubescent, otherwise glabrous or nearly so. Leaves 11 to 15 cm long, the rachis and petioles sparingly pubescent, ultimately glabrous or nearly so; leaflets 5 or 7, coriaceous, oblong-ovate to oblong-elliptic, olivaceous, shining, 5 to 9 cm long, 2.5 to 5 cm wide, the base usually broadly rounded, apex obtuse or broadly and obtusely acuminate; lateral nerves usually 6 on each side of the midrib, slender, not prominent; petiolules 5 to 7 mm long. Panicles terminal, branched from the base, about 20 cm long, the lower branches up to 13 cm in length. Flowers numerous, their pedicels about 1 cm long. Calyx densely ferruginous-pubescent, about 1.5 cm in diameter, the lobes oblong-ovate, about 6 mm long, 4.5 mm wide, obtuse. Petals violet, glabrous, the standard reniform-orbicular, rounded, about 13 mm wide, the claw stout, thick, with two anterior oblong, fleshy, 2.5 mm long appendages, wing and keel of the petals subequal, their claws 4 to 6 mm long. Filaments glabrous. Ovary oblong, densely pubescent, usually 3-ovulate.

MINDANAO, Surigao Province, *Bur. Sci.* 34494 *Ramos & Pascasio*, April 24, 1919, on ridges at low altitudes at the iron deposit on the northeast coast.

The alliance of this species is not entirely clear, as the fruits are unknown. It is, however, radically different from all other species of the genus known to me.

LINACEAE

IXONANTHES Jack

IXONANTHES LONGIPEDUNCULATA sp. nov.

Arbor parva, glabra; foliis ellipticis ad elliptico-obovatis, 9 ad 12 cm longis, apice rotundatis, basi acutis, coriaceis, nitidis, nervis utrinque circiter 8; infructescentiis axillaribus, longe pedunculatis, apice dichotome ramosis, ramis primariis circiter 1 cm longis, pedunculis circiter 15 cm longis; capsulis oblongis, 2.5 cm longis, sepalis persistentibus rotundato-ovatis, 5 ad 7 mm longis.

A glabrous tree, 4 to 5 m high, the branchlets smooth, reddish-brown. Leaves elliptic to elliptic-obovate, rounded, the base usually acute and often narrowly decurrent along the petioles, brownish-olivaceous when dry, shining, 9 to 12 cm long, 5 to 8 cm wide; lateral nerves about 8 on each side of the midrib, distinct, as are the reticulations. Petioles about 2 cm long. Infructescences axillary, solitary, 2-branched at the apex, the

primary branches 1 cm long, the peduncles about 15 cm long. Capsules oblong, 2.5 cm long, the persistent sepals ovate-rounded, 5 to 7 mm long.

MINDANAO, Surigao Province, *Bur. Sci. 34488 Ramos & Pascasio*, April 24, 1919, at the iron deposit on the northeast coast, on ridges at low altitudes.

This is the second representative of this small genus to be found in the Philippines and is strongly characterized by its elongated peduncles.

RUTACEAE

EVODIA Forster

EVODIA CORIACEA sp. nov.

Arbor parva, partibus junioribus exceptis glabra, ramulis circiter 6 mm diametro; foliis 3-foliolatis, foliolis coriaceis, obovatis ad oblongo-obovatis, 6 ad 8 cm longis, apice late rotundatis admodum leviter retusis, basi cuneatis, nervis utrinque circiter 7, cum reticulis valde perspicuis; infructescentiis axillaribus, 2 ad 2.5 cm longis, depauperato-paniculatis, fructibus confertis, coccis ovoideis, 4 mm longis.

A small tree, glabrous except the younger parts, ultimate branches about 6 mm in diameter, rugose, the petiolar scars large and conspicuous. Leaves 3-foliate, their petioles 3.5 to 7 cm long; leaflets coriaceous, somewhat shining, obovate to oblong-obovate, 6 to 8 cm long, 3.5 to 4.5 cm wide, the apex broadly rounded, sometimes slightly retuse, narrowed below to the cuneate or somewhat decurrent-acuminate base; lateral nerves about 7 on each side of the midrib, prominent and conspicuous as are the lax reticulations; petiolules 5 to 8 mm long. Infructescences axillary, 2 to 2.5 cm long, depauperate-paniculate, the fruits somewhat crowded, the individual cocci ovoid, about 4 mm in length.

DINAGAT, *Bur. Sci. 35172 Ramos & Pascasio*, May 12, 1919, in forests at low altitudes.

In many respects this species resembles *Evodia laxireta* Merr., from which it is readily distinguished by its shorter infructescences and smaller fruits, as well as by its shorter, differently shaped, rounded or retuse, fewer-nerved leaflets.

TETRACOMIA Hooker f.

TETRACOMIA ACUMINATA sp. nov.

Frutex 3 ad 5 m altus, inflorescentiis leviter pubescens exceptis glaber; foliis oblongo-obovatis ad oblongo-ellipticis, sub-

coriaceis, basi acutis, apice perspicue sed breviter acuminatis, nervis utrinque 8 ad 10, distinctis; inflorescentiis axillaribus, solitariis, pedunculatis, 7 ad 13 cm longis, partibus junioribus leviter pubescens, floribus numerosis; calycis lobis late ovatis; petalis accrescentibus, persistentibus, ad 4 mm longis; capsulis solitariis, oblongis, obtusis, rugosis, 5 mm longis.

A shrub, 3 to 5 m high, glabrous except the younger parts of the inflorescences, the branches usually reddish-brown. Leaves oblong-obovate to oblong-elliptic, 8 to 13 cm long, 4 to 6 cm wide, subcoriaceous, narrowed to the acute base and to the conspicuously but shortly acuminate apex, brownish or olivaceous when dry, shining; lateral nerves 8 to 10 on each side of the midrib, distinct, anastomosing; petioles 1.5 to 2.5 cm long, jointed with the leaflets. Inflorescences axillary, solitary, peduncled, 7 to 13 cm long, the branches spreading or ascending, the younger parts sparingly pubescent. Flowers numerous, yellowish-green, 4-merous. Calyx about 4 mm in diameter, the lobes 4, broad. Petals ovate, acute, persistent and accrescent, up to 4 mm long. Filaments of the 4 fertile stamens 2.5 mm long, on the margin of the very broad disk, carpels 4 but only 1 developing into a fruit. The mature capsule oblong, obtuse, 5 mm long, the valves rugose externally. Seed solitary, including the broad 2.5 mm wide wing about 4 mm in length.

BUCAS GRANDE, *Bur. Sci.* 35135 (type), 35106 Ramos & Pascasio, June 10, 1919. MINDANAO, Surigao Province, at the iron deposit on the northeast coast, *Bur. Sci.* 34707 Ramos & Pascasio, June 15, 1919, in forests at low altitudes, ascending to 350 meters.

The third species of this genus to be found in the Philippines and readily distinguishable from its congeners by its acuminate leaves.

SIMARUBACEAE

EURYCOMA Jack

EURYCOMA EGLANDULOSA sp. nov.

Arbor parva, inflorescentiis et ramulis junioribus exceptis glabra; ramulis incrassatis, 1.5 ad 2 cm diametro; foliis numerosis, confertis, usque ad 60 cm longis, foliolis circiter 30, coriaceis, anguste oblongis ad anguste oblongo-obovatis, acutis ad rotundatis, basi acutis, 6 ad 8 cm longis; paniculis axillaribus, foliis aequantibus, castaneo-pubescens, haud glandulosis; floribus circiter 7 mm longis, petalis utrinque pubescens.

A small tree, 7 to 8 m high, glabrous except the tips of the branchlets and the inflorescences, the ultimate branchlets terete,

1.5 to 2 cm in diameter. Leaves numerous, crowded at the tips of the branchlets, about 60 cm long, the rachis reddish-brown when dry, glabrous; leaflets about 15 pairs, coriaceous, narrowly oblong to narrowly oblong-obovate, the upper surface brownish-olivaceous and strongly shining when dry, the lower surface much paler and scarcely shining, 6 to 8 cm long, 1.5 to 2 cm wide, base acute, often slightly inequilateral, apex rounded to acute; lateral nerves indistinct, 12 to 15 on each side of the midrib; petiolules 2 mm long or less. Panicles axillary, as long as the leaves, sparingly castaneous-pubescent with very short simple hairs, not at all glandular. Flowers about 7 mm long. Calyx-teeth ovate, obtuse, about 1.5 mm long, puberulent. Petals oblong, acute or obtuse, about 6 mm long and 3 mm wide, both surfaces puberulent, the margins below inflexed. Filaments 2.5 mm long, the basal glandular appendages 2, narrowly oblong, up to 1 mm long, slightly pubescent. Ovary pubescent. Immature fruits oblong-ellipsoid, 1.5 mm long, apex rounded, base narrowed and subacute.

MINDANAO, Surigao Province, *Bur. Sci.* 34592 Ramos & Pascasio (type), April 24, 1919. DINAGAT, *Bur. Sci.* 35207 Ramos & Pascasio, May 12, 1919. On ridges and in forests at low altitudes, the type from the iron deposit on the northeast coast of Surigao.

Eurycoma longifolia Jack has been accredited to Luzon on the basis of a specimen, so labeled, collected by Lobb; it is absolutely certain that Lobb's specimen came from Malay Peninsula or from Borneo where Jack's species is common, and not from Luzon. The present species then is the first definite record for this small genus for the Philippines. In general appearance *Eurycoma eglandulosa* closely resembles *E. longifolia*, but the indumentum on the inflorescences consists solely of very short, castaneous, simple hairs, and is never glandular as in Jack's species.

BURSERACEAE

CANARIUM Linnaeus

CANARIUM UNIFOLIOLATUM sp. nov.

Arbor parva, glaberrima, foliis 1-foliolatis, oblongis, coriaceis, nitidis, integris, 9 ad 15 cm longis, perspicue acuminatis, basi acutis, nervis utrinque 8 ad 10, perspicuis; racemis axillaribus, 1.5 ad 2 cm longis, paucifloris, floribus circiter 4 mm longis; drupis subteretibus, leviter inaequilateralibus, acutis, circiter 1.3 cm longis, rugosis.

A small, entirely glabrous tree with simple leaves. Leaves

oblong, coriaceous, shining when dry, 9 to 15 cm long, 3.5 to 6 cm wide, entire, the apex rather prominently acuminate, the base acute; lateral nerves 8 to 10 on each side of the midrib, prominent, the reticulations distinct. Petioles 5 to 20 cm long. Racemes simple, axillary, few-flowered, 1.5 to 2 cm long, the pedicels stout, 1.5 mm long or less, the bracteoles linear-lanceolate, acuminate, about 1 mm long. Calyx somewhat cup-shaped, narrowed below, 2 to 2.5 mm long, the lobes short, broader than long. Petals oblong-elliptic, 3 mm long. Disk prominent, truncate. Staminodes 6, inserted outside of the disk. Ovary ovoid, 1.2 mm long. Fruit nearly terete, oblong-ovoid, somewhat inequilateral, acute, about 1.3 cm long, the pericarp thin, wrinkled when dry.

MINDANAO, Surigao Province, *Bur. Sci.* 34720 Ramos & Pascasio, June 14, 1919, along streams at low altitudes at the iron deposit on the northeast coast.

A species belonging in the same group with *Canarium villosum* F.-Vill. but distinguished from all previously described forms of the genus by its simple leaves.

MELIACEAE

DYSOXYLUM Blume

DYSOXYLUM CAPIZENSE sp. nov. § *Eudysoxylum*.

Arbor parva, partibus junioribus inflorescentiisque puberulis; foliis alternis, usque ad 18 cm longis, foliolis oppositis, circiter 10, chartaceis, nitidis, oblongo-ovatis ad oblongo-lanceolatis, 4 ad 8 cm longis, acuminatis, nervis utrinque circiter 15, indistinctis, reticulis subobsoletis; inflorescentiis solitariis, spiciformibus, e axillis defoliatis, 4 ad 5 cm longis; floribus 4-meris, 5 ad 6 cm longis, calycis circiter 3 mm diametro; petalis oblongis, extus puberulis; ovario 4-locellato, pubescente.

A tree, about 5 m high, the young branchlets, inflorescences, and petioles grayish or yellowish puberulent. Leaves alternate, 15 to 18 cm long, the petioles and rachis somewhat angular; leaflets opposite, usually 10 or 11, firmly chartaceous, brownish and shining when dry, glabrous, somewhat inequilateral, oblong-ovate to oblong-lanceolate, 4 to 8 cm long, 2 to 3 cm wide, the apex acuminate, base acute or rounded; lateral nerves slender, indistinct, up to 15 on each side of the midrib, the reticulations obsolete or nearly so; petiolules 3 mm long or less. Inflorescences simple, solitary, spikelike, from the axils of fallen leaves, 4 to 5 cm long. Flowers sessile or subsessile, 4-merous, 5 to 6 mm long. Calyx shallowly cup-shaped, about

3 mm in diameter, 4-toothed, the teeth broad, subacute or obtuse, about 1 mm long. Petals oblong, obtuse, free, 5 mm long, 2 mm wide, puberulent externally. Staminal tube oblong, cylindric, or obscurely angled, 4 mm long, glabrous on both sides, crenate. Stamens 8, about 0.7 mm long. Disk annular, about 1 mm high and 1.5 mm in diameter. Ovary 4-celled, pubescent as is the base of the style, the ovary and style together about 3 mm long.

PANAY, Capiz Province, Mount Salibongbong, *Bur. Sci.* 35631 Martelino & Edaña, June, 1919, in forests near the summit, altitude about 650 meters.

This species has somewhat the appearance of *Dysoxylum turczaninowii* C. DC. but is not closely allied to that species, differing essentially in its simple, spicate inflorescences; the leaflets are also much smaller than in the latter species.

DYSOXYLUM SIARGAOENSE sp. nov. § *Eudysoxylum*.

Arbor parva, partibus junioribus et inflorescentiis caulinis plus minusve pubescens; foliis alternis, circiter 35 cm longis, vetustioribus glabris, foliolis circiter 13, chartaceis, oppositis, oblongis ad oblongo-lanceolatis, plerumque inaequilateralibus, 10 ad 15 cm longis, acuminatis, nervis utrinque circiter 15, tenuibus; racemis caulinis, fasciculatis 1.5 ad 2.5 cm longis; floribus 4-meris, breviter pedicellatis, 5 mm longis, calycis circiter 2 mm diametro; petalis oblongis liberis, glabris; ovario pubescente.

A small tree, the younger parts and the cauline inflorescences more or less pubescent. Branches terete, brownish when dry, the ultimate ones about 7 mm in diameter, glabrous, the branchlets and very young leaves more or less pubescent. Leaves alternate, about 35 cm long, glabrous when mature, the leaflets about 13, opposite, chartaceous, oblong to oblong-lanceolate, usually inequilateral, olivaceous when dry, 10 to 15 cm long, 3.5 to 4.5 cm wide, acuminate, the base usually strongly inequilateral and acuminate, the lamina longer on one side than on the other, or the uppermost leaflets equilateral; lateral nerves about 15 on each side of the midrib, slender and anastomosing, the reticulations lax, distinct; petioles 6 mm long or less. Racemes fascicled on the larger branches, 1.5 to 2.5 cm long, cinereous-pubescent. Flowers 4-merous, about 5 mm long, their pedicels 1.5 to 2 mm in length. Calyx pubescent, somewhat cup-shaped, about 2 mm long and wide, broadly and irregularly 4-toothed. Petals 4, white, free, oblong to oblong-oblancheolate, about 5 mm long, 1.5 mm wide, glabrous or slightly pubescent

at their apices outside. Staminal tube cylindric, toothed, glabrous on both surfaces, 3.5 mm long. Anthers usually 7, 0.8 mm long. Disk glabrous, free, about 1 mm high. Ovary and stigma about 4 mm long, the stigma 1 mm in diameter, the ovary pubescent, no thicker than the glabrous style.

SIARGAO, *Bur. Sci.* 35021 Ramos & Pascasio, May 27, 1919, in forests at low altitudes.

The alliance of this species is apparently with *Dysoxylum cumingianum* C. DC., but the mature leaves are glabrous while the flowers are very much smaller than in the latter species, there being further many other differential characters; the two are not closely allied.

DICHAPETALACEAE

DICHAPETALUM Thouars

DICHAPETALUM NITIDUM sp. nov.

Frutex scandens, ramulis et petiolis et inflorescentiis pubescens; foliis coriaceis, olivaceis, nitidissimis, oblongis ad oblongo-lanceolatis, 10 ad 14 cm longis, basi acutis vel obtusis, apice leviter acuminatis, nervis utrinque circiter 6, reticulis ultimis utrinque distinctis; cymis pedunculatis, 3 ad 4 cm longis, dense pubescens, petalis oblongo-obovatis, deorsum angustatis, 2 mm longis, apice retusis.

A woody vine, the branchlets, petioles, and inflorescences more or less pubescent with short, yellowish-brown or ferruginous hairs, the younger parts densely pubescent. Branches reddish-brown when dry. Leaves coriaceous, olivaceous and strongly shining when dry, oblong to oblong-lanceolate, 10 to 14 cm long, 2.5 to 4.4 cm wide, the base acute or obtuse, narrowed upward to the somewhat acuminate apex; lateral nerves about 6 on each side of the midrib, curved, anastomosing, distinct, the ultimate reticulations rather close, raised, and distinct on both surfaces; petioles about 1 cm long. Inflorescences peduncled, cymose, 3 to 4 cm long, dichotomously branched, up to 2 cm in diameter, the peduncles up to 2.5 cm long, the younger parts especially densely pubescent with short hairs. Pedicels about 1 mm long, twice as long as the lanceolate bracteoles. Flowers about 3.5 mm in diameter. Sepals densely pubescent, oblong, obtuse, 1.7 mm long. Petals glabrous, oblong-obovate, rounded, narrowed below, about 2 mm long, the apex minutely cleft for about 0.5 mm. Filaments about 1.2 mm long. Ovary densely lanate.

MINDANAO, Surigao Province, *Bur. Sci.* 34596 Ramos & Pas-

casio, April 24, 1919, at the iron deposit on the northeast coast on ridges at low altitudes.

This species apparently belongs in the group with *Dichapetalum timoriense* Engl. and seems to be sufficiently well characterized by its coriaceous leaves, the ultimate reticulations of which are rather close, raised, and distinct on both sides.

DICHAPETALUM OBLONGIFOLIUM sp. nov.

Frutex scandens, conspicue ciliatus; foliis chartaceis, oblongis, 8 ad 14 cm longis, in siccitate pallidis, basi acutis, sursum angustatis, apice obtuse acuminatis, nervis utrinque circiter 7, distinctis, reticulis laxis; cymis axillaribus, solitariis, brevissime pedunculatis, 1 ad 1.5 cm longis, sepalis dense pubescens, late ovatis, rotundatis, 2 mm longis, petalis oblongo-obovatis, apice retusis.

A woody vine, all parts ciliate with rather pale, spreading, more or less scattered hairs, the indumentum dense on the younger parts. Branches glabrous, grayish, about 3 mm in diameter, the younger branchlets rather densely ciliate. Leaves chartaceous, oblong, 8 to 14 cm long, 2 to 3.5 cm wide, rather pale when dry, the base acute, narrowed upward to the somewhat blunt-acuminate apex, both surfaces prominently ciliate with long, scattered hairs; lateral nerves about 7 on each side of the midrib, curved, distinct, the reticulations lax; petioles densely villous, 3 to 5 mm long. Cymes axillary, solitary, short-peduncled, dichotomous, 1 to 1.5 cm long, densely ciliate. Flowers white, 4 to 5 mm in diameter, their pedicels 2 mm long or less, the bracts lanceolate, acuminate, up to 3 mm in length, the bracteoles linear. Sepals densely pubescent, broadly ovate, rounded, 2 mm long. Petals 5, thin, oblong to narrowly oblong-obovate, about 1.8 mm long, the apex cleft for 0.5 mm or less. Filaments stout, about 1 mm long, the anthers about as long as the filaments.

BUCAS GRANDE, *Bur. Sci.* 35044 Ramos & Pascosio, June 6, 1919, in thickets along streams at low altitudes.

A species manifestly allied to *Dichapetalum ciliatum* Merr., but with longer, differently shaped leaves which are prominently ciliate on both surfaces.

DICHAPETALUM HOLOPETALUM sp. nov.

Frutex scandens, partibus junioribus et foliis et inflorescentiis perspicue ciliatis; foliis membranaceis, oblongo-ellipticis, 10 ad 18 cm longis, basi acutis, apice tenuiter acuminatis, nervis utrinque circiter 6, perspicuis, reticulis laxis; cymis

axillaribus, breviter pedunculatis, densis, subglobosis, circiter 1 cm diametro, petalis anguste spatulatis, 2 mm longis, integris; capsulis ellipsoideis, compressis, dense pubescens, 1.4 ad 2 cm longis, retusis.

A woody vine, the younger parts, leaves, and inflorescences prominently ciliate, the hairs spreading. Branches reddish brown, somewhat lenticellate, glabrous, the branchlets conspicuously ciliate. Leaves membranaceous, greenish when dry, oblong-elliptic, 10 to 18 cm long, 3.5 to 7 cm wide, narrowed below to the acute base and above to the rather slenderly acuminate apex, rather prominently ciliate on both surfaces or the upper surface ultimately glabrous; lateral nerves about 6 on each side of the midrib, prominent, the reticulations lax; petioles ciliate, 4 to 7 mm long. Cymes axillary, dense, subglobose, about 1 cm in diameter, short-penduncled. Sepals elliptic-ovate to elliptic-obovate, pubescent, 2 to 2.5 mm long. Petals glabrous, somewhat fleshy, not cleft, narrowly spatulate, about 2 mm long. Filaments about 2 mm long. Ovary villous. Capsules ellipsoid, compressed, 1.4 to 2 cm long, densely pubescent, normally retuse at the apex with a median dividing line, 2-seeded.

MINDANAO, Lanao District, Camp Keithley, *Mrs. Clemens* 1039, May and June, 1907 (type); Kolambugan, *For. Bur.* 23320 *Agama*, December 3, 1914; Tutunod, *For. Bur.* 23382 *Acuña*, December 12, 1914. In thickets at low altitudes, ascending to at least 670 meters.

A species in many respects resembling *Dichapetalum ciliatum* Merr. but distinguishable, among other characters, by its petals being entire and not cleft at their apices.

ANACARDIACEAE

SEMECARPUS Linnaeus

SEMECARPUS SURIGAENSIS sp. nov.

Arbor, circiter 8 m alta, inflorescentiis exceptis glaber, ramis circiter 8 mm diametro; foliis subcoriaceis, oblongo-ellipticis, nitidis, subtus pallidioribus, circiter 35 cm longis et 15 cm latis, basi acutis, apice breviter acuminatis, nervis utrinque circiter 22, valde perspicuis; inflorescentiis ♂ circiter 50 cm longis, multifloris, pubescens; floribus, subfasciculatis, sessilibus, 5 ad 6 mm diametro, sepalis et petalis extus dense ferrugineo-pubescens.

A tree, about 8 m high, the inflorescences and flowers ferruginous-pubescent, otherwise glabrous or nearly so. Branches terete, glabrous, the ultimate ones about 8 mm in diameter,

brownish, the very young branchlets slightly pubescent. Leaves oblong-elliptic, subcoriaceous, rather pale and shining when dry, the lower surface paler than the upper, but scarcely glaucous, about 35 cm long and 15 cm wide, the base acute, the apex abruptly acuminate, the acumen usually about 1 cm long; lateral nerves about 22 on each side of the midrib, very prominent on the lower surface, the reticulations distinct, the primary ones leaving the nerves at about right angles; petioles 2 to 3 cm long. Staminate panicles terminal, about 50 cm long, many-flowered, the lower branches up to 30 cm long. Flowers somewhat fascicled, on the branchlets, rather densely ferruginous-pubescent, sessile or with very short pedicels, 5 to 6 mm in diameter. Calyx about 3 mm in diameter, the lobes triangular, acute, about 1 mm long. Petals oblong-lanceolate, acute, 2.8 mm long, densely ferruginous-pubescent externally. Filaments 1.5 to 3 mm long.

MINDANAO, Surigao Province, *Bur. Sci.* 34772 Ramos & Pascasio, June 19, 1919, along streams at low altitudes.

This species is well characterized by its ample, glabrous leaves, and its very large, ferruginous-pubescent panicles. It is apparently most closely allied to the Moluccan *Semecarpus cassuvium* Roxb. and has no close allies among the known Philippine species.

AQUIFOLIACEAE

ILEX Linnaeus

ILEX CURRANII sp. nov. § *Euilex*, *Rugosae*.

Arbor parva, glabra, circiter 3 m alta; foliis eglandulosis, numerosis, coriaceis, olivaceis, nitidis, ovatis, 1 ad 1.5 cm longis, basi acutis ad rotundatis, sursum angustatis, apice breviter acuminatis, margine crenatis, nervis utrinque circiter 6, subtus cum reticulis prominulis; floribus axillaribus, fasciculatis vel solitariis, 4-meris, calycis lobis leviter ciliatis; fructibus globosis, 5 mm diametro, pyrenis 4.

A glabrous shrub, or small tree, about 3 m high, the branches rather pale, the branchlets nearly black when dry. Leaves coriaceous, ovate, 1 to 1.5 cm long, 7 to 12 mm wide, olivaceous, shining, not glandular, the base acute to rounded, the apex shortly and bluntly acuminate, margins distinctly crenate, the crenulations often with an indurated, incurved tip; lateral nerves about 6 on each side of the midrib, somewhat impressed on the upper surface, distinct on the lower surface as are the reticulations; petioles 2 to 4 mm long. Fruits subglobose, about 5 mm in diameter, somewhat rugose and nearly black when dry, containing 4 pyrenes, the persistent calyx about 2 mm in

diameter, obscurely 4-lobed, lobes slightly ciliate, the pedicels up to 4 mm in length. Flowers axillary, solitary or sometimes two or three in a fascicle, the pedicels subtended by several small bracts.

LUZON, Benguet Subprovince, Mount Pulog, *For. Bur.* 18069 Curran, Merritt, & Zschokke, January 6, 1908, on slopes in the mossy forest, altitude about 2,500 meters.

This species apparently belongs in the group with *Ilex rugosa* Schmidt and is well characterized by its small, ovate, rather distinctly nerved and reticulate, eglandular leaves. In general appearance it resembles *Ilex buergeri* Miq., but it has much smaller leaves.

ILEX PAUCINERVIA sp. nov. § *Thyrsoprinus*, *Indico-Malaicae*.

Frutex vel arbor parva glabra; foliis integris, coriaceis, oblongo-ellipticis ad oblongis, usque ad 4 cm longis, eglandulosis, supra minutissime puncticulatis, utrinque aequaliter angustatis, basi acutis, apice obtusis retusisque, in siccitate castaneis vel brunneis, nitidis, nervis utrinque 4 vel 5, reticulis obsoletis; inflorescentiis racemosis, axillaribus, solitariis, 5- ad 10-floris, floribus 5-meris; fructibus circiter 3 mm diametro.

A glabrous shrub or small tree, the branches and branchlets grayish yellow or the very young parts sometimes reddish brown. Leaves numerous, coriaceous, oblong-elliptic to oblong, 2 to 4 cm long, 10 to 18 mm wide, not glandular, the upper surface very minutely pitted, brown or castaneous and somewhat shining when dry, entire, subequally narrowed to the acute base and to the obtuse and distinctly retuse apex; lateral nerves slender, somewhat ascending, 4 or 5 on each side of the midrib, not prominent, arched-anastomosing, the reticulations obsolete or nearly so; petioles 2 to 4 mm long. Racemes axillary, solitary, usually about 1 cm long, 5- to 10-flowered; flowers 5-merous, their pedicels about 2 mm long. Fruits brown, ovoid or globose, about 3 mm in diameter, each containing 5 pyrenes, the persistent calyx about 2 mm in diameter, the lobes suborbicular, rounded, entirely glabrous.

LUZON, Nueva Ecija Province, Mount Umingan, *Bur. Sci.* 26396 Ramos & Edaño, August 19, 1916, in forest at the summit, altitude probably about 1,000 meters. This number was originally identified as *Ilex brunnea* Merr.

This species is well characterized by its oblong-elliptic to oblong leaves which are eglandular but which are minutely pitted on the upper surface and are further subequally narrowed to the acute base and to the obtuse and retuse apex. It is somewhat

similar to *Ilex microthyrsa* Loesen, but has very differently shaped leaves.

CELASTRACEAE

MICROTROPIS Wallich

MICROTROPIS ROSTRATA sp. nov.

Frutex glaber, ramulis rubro-brunneis, laevis; foliis oblongis ad late oblongo-lanceolatis, chartaceis, usque ad 20 cm longis, utrinque acutis vel leviter acuminatis, nervis primariis utrinque circiter 12, tenuibus, distinctis, floribus 5-meris; infructescentiis axillaribus, brevibus, cymosis, fructibus oblongis, circiter 2 cm longis, perspicue rostrato-acuminatis.

An erect glabrous shrub, the branches and branchlets terete, smooth, reddish-brown, the latter about 2.5 mm in diameter. Leaves opposite, chartaceous, pale and shining when dry, oblong to broadly oblong-lanceolate, 17 to 20 cm long, 5 to 6 cm wide, narrowed to the acute or somewhat acuminate base and apex; primary lateral nerves about 12 on each side of the midrib, slender, distinct, anastomosing, the reticulations lax; petioles about 1 cm long. Infructescences axillary, or sometimes terminating short lateral branchlets, usually solitary, cymose, peduncled, the peduncles 1 cm long or less. Fruits greenish-yellow when fresh, reddish-brown when dry, oblong, about 2 cm long and 8 mm in diameter, the apex prominently rostrate-acuminate. Persistent sepals 5, broadly ovate, rounded, about 2 mm long, the calyx 6 mm in diameter.

LUZON, Camarines Province, Paracale, *Bur. Sci.* 33568 Ramos & Edaña, November 29, 1918, in damp forests at low altitudes.

The alliance of this species is with *Microtropis philippinensis* Merr., from which it is distinguished by its larger leaves, more numerous lateral nerves and more prominently acuminate fruits.

HIPPOCRATEACEAE

HIPPOCRATEA Linnaeus

HIPPOCRATEA ELLIPTICARPA sp. nov.

Frutex scandens, glaber; foliis ellipticis ad elliptico-ovatis, crasse coriaceis, 15 ad 20 cm longis, nitidis, supra olivaceis, subtus brunneis, nervis utrinque 7, perspicuis; fructibus ellipticis, utrinque rotundatis, ligneis, 7 cm longis et 4 cm latis.

A scandent, glabrous vine, the branches somewhat reddish-brown, lenticellate, the ultimate ones 4 to 5 mm in diameter. Leaves elliptic to elliptic-ovate, thickly coriaceous, 15 to 20 cm long, 10 to 12 cm wide, shining, the upper surface olivaceous, the lower surface somewhat brownish, base rounded, apex

rounded to shortly and obtusely acuminate; lateral nerves about 7 on each side of the midrib, prominent, curved, the reticulations distinct; petioles about 1 cm long. Infructescences woody, about 6 cm long, trichotomous, each branch bearing 2 or 3 capsules. Mature fruits brownish, elliptic, rounded at both ends, somewhat woody, about 7 cm long and 4 cm wide.

MINDANAO, Surigao Province, *Bur. Sci.* 34761 Ramos & Pascasio, May 18, 1919, in dry forests at low altitudes.

The alliance of this species is with *Hippocratea megalocarpa* Merr., from which it is especially distinguished by its larger and more-numerously nerved leaves and its differently shaped, shorter fruits.

ICACINACEAE

GOMPHANDRA Wallich

GOMPHANDRA OBLONGIFOLIA sp. nov.

Arbor glabra, usque ad 10 m alta; foliis chartaceis, oblongo-ellipticis ad oblongis, olivaceis, nitidis; 9 ad 15 cm longis, utrinque subaequaliter angustatis, basi acutis, apice acuminatis, nervis utrinque 5 vel 6, reticulis obsoletis vel subobsoletis; cymis plerumque terminalibus oppositifoliisque, usque ad 4 cm longis; fructibus ellipsoideis, 1.5 ad 1.8 cm longis.

A tree, up to 10 m high, glabrous except the somewhat pubescent inflorescences. Leaves chartaceous, oblong-elliptic to oblong, olivaceous, when dry shining, the lower surface paler than the upper, 9 to 15 cm long, 3.5 to 6 cm wide, subequally narrowed to the acute base and to the more or less acuminate apex; lateral nerves 5 or 6 on each side of the midrib, distinct, obscurely anastomosing, the reticulations obsolete or nearly so; petioles about 1 cm long. Cymes solitary, peduncled, sparingly pubescent, leaf-opposed, mostly at the tips of the ultimate branchlets, in fruit up to 4 cm long. Fruit ellipsoid to oblong-ellipsoid, 1.5 to 1.8 cm long, brown when dry, faintly ridged or sulcate.

LUZON, Camarines Province, Paracale, *Bur. Sci.* 33727 Ramos & Edaño (type), *For. Bur.* 27403 Alambra; Lagonoy, *For. Bur.* 21103 Hsia. CATANDUANES, *Bur. Sci.* 30258, 30355 Ramos. In dipterocarp forests at low altitudes, fruiting in December and in April.

This species somewhat resembles *Urandra luzoniensis* Merr., which I now consider to belong in the genus *Gomphandra*, and the specimens cited above were originally so identified. The present species differs from *Urandra luzoniensis* in its oblong to oblong-elliptic, more-numerously nerved leaves which are

subequally narrowed to both base and apex and which do not approach the obovate type. It is possible that *Bur. Sci. 35264* Ramos & Pascasio from Dinagat Island is referable to the same species. In this specimen the cymes are axillary and also from the axils of fallen leaves, while the leaves are relatively narrower and subcaudate-acuminate. The extra-Philippine alliance of the species seems to be with *Gomphandra lanceolata* King, of the Malay Peninsula.

GOMPHANDRA LANCIFOLIA sp. nov.

Arbor parva, glabra, foliis lanceolatis, brunneo-olivaceis, nitidis, chartaceis vel subcoriaceis, 7 ad 9 cm longis, utrinque subaequaliter angustatis, apice tenuiter subcaudato-acuminatis, nervis utrinque 3, tenuibus, reticulis obsoletis; fructibus carnosus, oblongo-obovoideis ad oblanceolatis, 2.5 ad 3 cm longis, mesocarpio leviter sulcato.

A glabrous tree, about 6 m high. Leaves lanceolate, chartaceous or subcoriaceous, brownish-olivaceous and somewhat shining when dry, 7 to 9 cm long, 1.5 to 2.5 cm wide, subequally narrowed to the cuneate or somewhat acuminate base and to the slenderly subcaudate-acuminate apex, the acumen usually about 1 cm long; lateral nerves usually 3 on each side of the midrib, distant, curved-ascending, slender, the reticulations nearly obsolete; petioles 5 to 7 mm long. Fruits axillary, their peduncles up to 1 cm long, fleshy, oblong-obovate to oblanceolate, salmon-colored, 2.5 to 3 cm long, the mesocarp somewhat longitudinally ridged.

LUZON, Tayabas Province, Mount Dingalan, on the east coast, on dry forested slopes, altitude about 300 meters, locally known to the Negritos as *paramuyog*.

A species well characterized by its lanceolate, subcaudate-acuminate, few-nerved leaves which are subequally narrowed to both base and apex, as well as by its rather large fruits. It is probably as closely allied to *Stemonurus fuliginea* Elm., which belongs in *Gomphandra*, as to any other described species.

GOMPHANDRA GLABRA sp. nov.

Arbor, circiter 10 m alta, ramulis junioribus inflorescentisque parcissime pubescentibus exceptis glabra; foliis oblongis, membranaceis, usque ad 11 cm longis, in siccitate nitidis, olivaceo-brunneis, acutis vel leviter acuminatis, basi subacutis, nervis utrinque circiter 10, subtus perspicuis; cymis axillaribus, paucifloris, usque ad 3.5 cm longis; fructibus oblongis, inaequilateralibus, glabris, usque ad 8 mm longis.

A tree, about 10 m in height, glabrous except the very tips of the branchlets and the cymes which are sparingly appressed-pubescent. Branches terete, grayish, smooth, the branchlets reddish brown, slender. Leaves alternate, oblong, membranaceous, 9 to 11 cm long, 3.5 to 4 cm wide, brownish-olivaceous, of the same color and shining on both surfaces when dry, the apex acute to slightly acuminate, minutely apiculate, base subacute; lateral nerves about 10 on each side of the midrib, slender but prominent on the lower surface, curved-anastomosing, the reticulations distinct, lax; petioles 8 to 10 mm long. Cymes axillary, solitary, peduncled, lax, apparently few-flowered, up to 3.5 cm long, in age white-glabrous, but in flower slightly appressed-pubescent. Fruits oblong, up to 8 mm long, glabrous, the pericarp somewhat fleshy, prominently gibbous on one side.

SAMAR, Yabong, *Phil. Pl.* 1628 Merrill (type), April, 1914, on forested slopes; Catubig River, *Bur. Sci.* 24241, 24547 Ramos, March 10, 1916, *Sablaya* 16; Cauayan Valley, *Bur. Sci.* 17660 Ramos, March, 1914. LEYTE, Wenzel 1029, 1722, 1744. In primary forests at low altitudes.

Similar and closely allied to *Gomphandra cumingiana* F.-Vill., differing in being almost entirely glabrous, and in its somewhat differently shaped, more-numerously nerved leaves.

GONOCARYUM Miquel

GONOCARYUM GRANDIFOLIUM sp. nov.

Arbor parva, glabra; foliis coriaceis, late elliptico-ovatis, 25 ad 28 cm longis, circiter 18 cm latis, nitidis, basi late rotundatis, apice breviter obtuse acuminatis, nervis utrinque circiter 4, perspicuis; floribus sessilibus, 6 ad 7 mm longis, fasciculatis, fasciculis in axillis defoliatis, paucifloris; sepalis suborbicularibus, 1 ad 1.5 mm diametro, leviter pubescens.

A glabrous tree, at least 5 m high. Leaves coriaceous, broadly elliptic-ovate, 25 to 28 cm long, about 18 cm wide, shining when dry, base broadly rounded, the apex shortly and bluntly acuminate; lateral nerves about 4 on each side of the midrib, the primary reticulations very lax; petioles stout, about 2 cm long. Flowers sessile, fascicled in the axils of fallen leaves, 6 to 7 mm long. Calyx lobes suborbicular, slightly pubescent, 1 to 1.5 mm in diameter. Corolla white, glabrous, the lobes oblong, acute, 1.5 to 2 mm long. Ovary ovoid, the style cylindric, stout, 1.2 mm in length.

DINAGAT, *Bur. Sci.* 35205 Ramos & Pascasio, May 11, 1919, in forests along small streams at low altitudes.

This species is especially characterized by its large leaves and

its fascicled flowers, in these characters being readily distinguished from its ally *Gonocaryum calleryanum* Becc.

SAPINDACEAE

GUIOA Cavanilles

GUIOA BICOLOR sp. nov.

Arbor parva, partibus junioribus leviter pubescens; foliis 25 ad 30 cm longis, foliolis plerumque 9, crasse coriaceis, oblongo-ovatis ad oblongo-ellipticis, 9 ad 12 cm longis, acute acuminatis, subtus glaucescentibus; paniculis axillaribus usque ad 15 cm longis, leviter pubescens; floribus numerosis, petalis anguste obovatis, 1.5 mm longis, appendiculis villosis, petalis subaequantibus.

A small tree, the younger parts sparingly pubescent, the older parts glabrous. Branchlets dark reddish-brown or nearly black when dry. Leaves 25 to 30 cm long, the leaflets usually 9, thickly coriaceous, oblong-ovate to oblong-elliptic, 9 to 12 cm long, 3.5 to 5.5 cm wide, the base somewhat inequilateral, the apex rather sharply acuminate, the upper surface brownish when dry, glabrous, shining, the lower surface glaucous and sparingly pubescent with short, widely scattered hairs; lateral nerves about 9 on each side of the midrib, distinct, the reticulations not prominent; petiolules up to 1 cm in length, their bases much thickened. Panicles axillary, up to 15 cm long, branched from the base, very slightly pubescent. Flowers white, numerous; sepals unequal, 2 to 2.5 mm long. Petals narrowly obovate, 1.5 mm long, their margins slightly ciliate, the villous scales about as long as the petals.

MINDANAO, Surigao Province, *Bur. Sci.* 34487 Ramos & Pascasio, April 25, 1919, at the iron deposit on the northeast coast, on ridges, altitude about 780 meters.

This species is rather radically different from the previously described Philippine representatives of the genus in its thickly coriaceous leaflets which are glaucous on the lower surface.

VITACEAE

TETRASTIGMA Planchon

TETRASTIGMA MINDANAENSE sp. nov.

Frutex scandens, partibus junioribus inflorescentiisque pubescens; foliis 3-foliolatis, foliolis chartaceis, ellipticis ad ovato-ellipticis, 10 ad 13 cm longis, usque ad 7 cm latis, basi rotundatis, apice abrupte acuminatis, marginae distanter dentatis, dentibus apiculatis; inflorescentiis pubescens, circiter 10 cm longis, ramis primariis paucis, floribus umbellatim dispositis; petalis oblongo-

ovatis, obtusis vel acutis, obscure cucullatis, haud corniculatis, 2 mm longis, pubescens.

A vine, the younger parts and inflorescences rather distinctly pubescent or puberulent, the branches terete, glabrous, about 3 mm in diameter, the younger ones more or less pubescent. Leaves 3-foliolate, their petioles about 4 cm long and with 1- to 2-cm long petiolules, somewhat pubescent; leaflets chartaceous when dry, olivaceous, elliptic to ovate-elliptic, 10 to 13 cm long, 5 to 7 cm wide, base rounded, often somewhat inequilateral, apex abruptly acuminate, the margins distantly toothed, the teeth rather coarsely apiculate; lateral nerves slender, distinct, about 8 on each side of the midrib. Inflorescences pubescent, about 10 cm long, the primary branches few, the secondary and tertiary ones umbellately arranged, the flowers umbellate at the tips of the ultimate branchlets, their pedicels 3 to 5 mm long, pubescent, primary branches subtended by broadly ovate, pubescent bracts, about 3 mm in length; petals 4, oblong-ovate, obtuse or acute, obscurely cucullate at their apices but not at all corniculate, about 2 mm long, pubescent externally. Ovary glabrous, ovoid, the stigma obscurely lobed.

MINDANAO, Surigao Province, *Bur. Sci.* 34463 Ramos & Pascasio, April, 1919, in damp forests at low altitudes.

The alliance of this species is apparently with *Tetrastigma loheri* Gagnep., but the inflorescences are much more ample, while the leaflets are much broader and very differently shaped than in Gagnepain's species.

LEE A Royen

LEE A PLATYPHYLLA sp. nov.

Frutex erectus, glaber; foliis pinnatis, circiter 70 cm longis, plerumque 7-foliolatis, foliolis circiter 34 cm longis et 14 cm latis, oblongis ad oblongo-ovatis, basi late acutis vel subrotundatis, apice acuminatis, nervis utrinque circiter 18, perspicuis; inflorescentiis sessilibus, ovoideis, densis, subcapitatis, circiter 2.5 cm longis; floribus numerosis, confertis, 4-meris, calycis 4 mm longis, petalis (partibus liberis) 3.5 mm longis; fructibus globosis, carnosius, circiter 1.5 cm diametro.

A glabrous shrub, the ultimate branches about 1.5 cm in diameter. Leaves simply pinnate, about 70 cm long, usually 7-foliolate; leaflets about 34 cm long and 14 cm wide, subcoriaceous, brownish when dry, oblong to oblong-ovate, the base broadly acute or somewhat rounded, the apex distinctly acuminate, the margin rather coarsely toothed except near the base; lateral nerves about 18 on each side of the midrib, very prominent, the

primary reticulations distinct, subparallel; petiolules stout, 1 to 1.5 cm long. Inflorescences dense, ovoid, sessile, about 2.5 cm long, the flowers greenish-yellow, 4-merous, their petals up to 5 mm in length. Calyx about 5 mm long, cup-shaped, broadly 4-lobed. Petals oblong-ovate, about 3.5 mm long and 3 mm wide, the tube extended 2.5 to 3 mm above the attachment of the petals, the anthers narrowly oblong, 2 to 2.5 mm long. Fruit fleshy, globose, glabrous, red, about 1.5 cm in diameter, 1- or 2-seeded, the seeds subglobose, about 7 mm thick.

MINDANAO, Surigao Province, *Bur. Sci.* 34397 Ramos & Pascasio, April 30, 1919, in damp forests at low altitudes.

A species belonging in the group with *Leea congesta* Elm., but with very much larger, more-numerously nerved leaflets.

LEEAL CAPITATA sp. nov.

Frutex erectus, glaber; foliis pinnatis, usque ad 90 cm longis, plerumque 11-foliolatis, foliolis oblongis ad oblongo-lanceolatis, coriaceis, 23 ad 36 cm longis, 5 ad 10 cm latis, basi late rotundatis, apice tenuiter acuminatis, nervis utrinque circiter 16, perspicuis; inflorescentiis ovoideis vel subgloboseis, densis capitatis, 3 ad 4 cm diametro; floribus confertis, 4-meris, calycis circiter 5 mm longis, petalis (partibus liberis) circiter 4 mm longis.

An erect, glabrous shrub, 1 to 2 m high, the ultimate branches up to 1.5 cm in diameter. Leaves simply pinnate, up to 90 cm long, usually 11-foliolate; leaflets oblong to oblong-lanceolate, coriaceous, 23 to 36 cm long, 5 to 10 cm wide, olivaceous when dry, the base rather broadly rounded, the apex slenderly acuminate, the acumen up to 2.5 cm long, margins rather coarsely toothed; lateral nerves about 16 on each side of the midrib, prominent, the reticulations subparallel; petiolules stout, 1 to 4 cm long. Inflorescences sessile, ovoid or subglobose, very dense, 3 to 4 cm in diameter. Flowers numerous, crowded, white, 4-merous, their pedicels up to 5 mm in length. Calyx cup-shaped, about 5 mm long, irregularly 3- or 4-lobed. Petals oblong-ovate, about 4 mm long, 2 to 3 mm wide, reflexed, the tube projecting about 3 mm above the insertion of the petals. Anthers 4, elliptic, about 2 mm long.

LUZON, Tayabas Province, Mount Cadig, Mount Pular, and Mount Binuan, three localities on the east coast, *Bur. Sci.* 19430 Ramos, *Bur. Sci.* 28506 Ramos & Edaña, *Bur. Sci.* 25502 Yates, in flower December to May. In damp forests along small streams at low and medium altitudes.

The alliance of this species is with *Leea congesta* Elm., from

which it is readily distinguished by its much larger and fewer-nerved leaflets which are broadly rounded at the base; it is distinguished from *Leea platyphylla* especially by its fewer, differently shaped, relatively much narrower leaflets.

LEEALONGIPETIOLATA sp. nov.

Frutex, circiter 1 m altus, glaber; foliis unifoliolatis, longe petiolatis, chartaceis vel subcoriaceis, oblongis ad oblongo-ellipticis, utrinque acutis, usque ad 30 cm longis, margine grosse sinuato-dentatis, nervis utrinque circiter 11, subtus perspicuis, curvatis; petiolo circiter 9 cm longo; infructescentiis in axillis superioribus, circiter 4 cm longis, sparse ramosis; fructibus carnosus, subglobosis, circiter 1.5 cm diametro, seminibus 2 vel 3.

An erect shrub, about 1 m high, glabrous throughout, the ultimate branches terete, dark brown, nearly smooth, about 4 mm in diameter. Leaves simple, oblong to oblong-elliptic, chartaceous to subcoriaceous, olivaceous and somewhat shining when dry, the lower surface paler than the upper, 22 to 30 cm long, about 11 cm wide, base and apex acute, margins rather coarsely sinuate-dentate; lateral nerves about 11 on each side of the midrib, prominent on the lower surface, curved, anastomosing close to the margin, the reticulations subparallel, distinct; petioles about 9 cm long. Infructescences in the upper axils, about 4 cm long, sparingly branched. Fruits fleshy, globose or subglobose, reddish when fresh, dark brown when dry, each with 2 or 3 globose seeds.

LUZON, Camarines Province, Paracale, *Bur. Sci.* 33633 Ramos & Edaño, December 11, 1918, in damp forests at low altitudes.

This species belongs in the group with *Leea acuminatissima* Merr. and *L. unifoliolata* Merr. and is closely allied to both of these, from which it is readily distinguished by its larger leaves and very much longer petioles.

LEEARAMOSII sp. nov.

Frutex erectus, inflorescentiis laxis, cinereo-pubescens; foliis circiter 60 cm longis, bipinnatis, pinnis paucis, plerumque 5-foliolatis; foliis chartaceis, ellipticis ad oblongo-ellipticis; 12 ad 22 cm longis, basi plerumque late rotundatis, apice subabrupte tenuiter acuminatis, nervis utrinque circiter 12, perspicuis, subtus ad costa leviter fasciculato-ciliatis; inflorescentiis usque ad 20 cm longis; floribus 5-meris, subalbidis, sessilibus, 5-meris, circiter 5.5 mm longis; fructibus depresso-globosis, 6 ad 8 mm diametro.

An erect shrub, about 2.5 m high, the inflorescences cinereous-pubescent, the leaflets with few, scattered, somewhat tufted cilia on the midrib beneath, the ultimate branches about 8 mm in diameter. Leaves bipinnate, about 60 cm long, the pinnae few, the lower ones usually 5-foliolate; leaflets chartaceous, elliptic to oblong-elliptic, 12 to 22 cm long, 6 to 10 cm wide, the base usually broadly rounded, the apex rather abruptly acuminate, the acumen slender, blunt, 1 to 1.5 cm long, margins distinctly toothed; lateral nerves prominent, about 12 on each side of the midrib, the reticulations distinct; petiolules 5 to 15 mm long. Inflorescences lax, branched from near the base, up to 20 cm long and as wide as or somewhat wider than long, the branches few, spreading. Flowers 5-merous, numerous, white or somewhat yellowish, sessile or subsessile and somewhat crowded at the tips of the ultimate branchlets, about 5.5 mm long. Calyx cup-shaped, 2.5 mm long, 5-lobed, the lobes broadly ovate, about 1 mm in length, glabrous. Petals oblong, 3 mm long, obtuse to acute, recurved. Anthers 1.2 mm long. Fruits depressed-globose, red when fresh, dark brown when dry, 6 to 8 mm in diameter, obscurely 5- or 6-sulcate when dry.

MINDANAO, Surigao Province, *Bur. Sci.* 34550 *Ramos & Pascasio*. SIARGAO, *Bur. Sci.* 34945 (type), 34907 *Ramos & Pascasio*, May 27, 1919, in thickets and forests at low altitudes.

This species in general appearance is not radically different from *Leea indica* (Burm. f.) Merr. and several other species allied to the latter. The scattered ciliate hairs on the midrib beneath are a distinguishing character.

STERCULIACEAE

STERCULIA Linnaeus

STERCULIA GLABRIFOLIA sp. nov.

Arbor glabra, vel ramulis junioribus leviter pubescens, ramis circiter 5 mm diametro; foliis subcoriaceis, oblongis ad oblongo-ellipticis, integris, 8 ad 22 cm longis, breviter obtuse acuminatis, basi late rotundatis et distincte cordatis, nervis utrinque 8 ad 12, perspicuis; petiolo 4 ad 7 cm longo; inflorescentiis ♂ solitariis, glabris, axillaribus, anguste paniculatis, circiter 12 cm longis, paucifloris; floribus 4-meris, extus glabris, intus dense villosis, alabastro 7 ad 8 mm longo, lobis acutis, liberis.

A tree, about 5 m high, entirely glabrous except the very young tips of the branchlets and the inside of the calyx. Branches te-

rete, rugose when dry, the ultimate ones about 5 mm in diameter, the very tips of the branchlets sparingly ferruginous-pubescent. Leaves subcoriaceous, oblong to oblong-elliptic, 8 to 22 cm long, 4 to 10 cm wide, entire, the apex shortly blunt-acuminate, the base broadly and abruptly rounded and rather deeply cordate; lateral nerves 8 to 12 on each side of the midrib, prominent, obscurely anastomosing, sparingly bearded on the axils on the lower surface; petioles 4 to 7 cm long. Staminate inflorescences axillary, solitary, narrowly paniculate, about 12 cm long, the branches few, the lower ones 2 cm long or less, 2- or 3-flowered, the upper ones small and 1-flowered, the pedicels 1.5 to 2 cm long, slender. Staminate flowers 4-merous, the buds ovoid, about 7 to 8 mm long, the calyx glabrous externally except at the edges of the valvate lobes, the lobes broad, acute, irregular, apparently free at maturity, inside densely villous. Anthers many in a globose head.

MINDANAO, Surigao Province, Hegapit River, *Bur. Sci.* 34517 *Ramos & Pascasio*, April 23, 1919, in forests at low altitudes.

A very characteristic species, not closely related to any other one known to me, readily distinguished by its being nearly glabrous and by its oblong to oblong-elliptic, glabrous leaves which are broadly rounded and rather deeply cordate at the base.

DILLENIACEAE

SAURAUIA Willdenow

SAURAUIA MINDORENSIS sp. nov.

Arbuscula, circiter 3 m alta; foliis oblanceolato-ellipticis, chartaceis, circiter 25 cm longis, apice breviter abrupteque acuminate, basi angustatis, acutis, supra glabris, nitidis, subtus pallide tomentosis nitidisque, nervis utrinque circiter 22; cymis axillaribus, brevibus, paucifloris, floribus circiter 2 cm diametro, calycis lobis setis patulis 2.5 ad 4.5 mm longis; obtectis.

A shrub, about 3 m high. Branches slender, glabrous, except for few scattered, appressed scales, the branchlets with numerous, appressed, acicular, 2 to 6 mm long scales. Leaves oblanceolate-elliptic, chartaceous, 20 to 24 cm long, about 8 cm wide, the upper surface dark-colored when dry, glabrous and somewhat shining, the lower surface densely pale ferruginous-tomentose, almost flesh-colored, the apex shortly and abruptly acuminate, the acumen apiculate, the leaf gradually narrowed in the lower half to the acute base, the margins prominently apiculate-dentate; nerves about 22 on each side of the midrib distinct beneath, obscurely anastomosing, the reticulations obscure; petioles

2.5 to 5 cm long, with few appressed setose scales. Cymes in the upper axils, few-flowered, shorter than the petioles. Outer sepals orbicular-ovate, very shortly acuminate, about 13 mm long and wide, more or less tomentose outside and densely covered with acicular spreading scales 2.5 to 4.5 mm long, the inner surface tomentose, the inner sepals smaller and setose only on the exposed portions. Ovary densely ferruginous-hirsute, ovoid; styles 5, free, in bud 2 mm long.

MINDORO, south of Lake Naujan, *For. Bur. 6849 Merritt*, April, 1907, in forests, at an altitude of about 100 meters.

A species well characterized by its chartaceous leaves which are entirely glabrous above and densely tomentose and shining beneath, the indumentum somewhat salmon- or flesh-colored; its short cymes; comparatively large flowers; densely setose calyx; and pubescent ovary.

SAURAUIA TRUNCIFLORA sp. nov.

Arbor parva, ramulis irregulariter adpresse setosis exceptis glabra; foliis oblanceolatis, chartaceis, 22 ad 35 cm longis, supra olivaceis laevis, apice breviter acuminatis, deorsum angustatis, basi cuneatis, margine serrulatis, nervis utrinque 15 ad 20, perspicuis, adscendentibus; inflorescentiis caulinis, floribus tenuiter pedicellatis, confertis, fasciculis usque ad 7 cm diametro; sepalis elliptico-ovatis, 5 ad 9 mm longis, glabris; ovario glabro; stylis 3, deorsum connatis.

A small tree, reaching a height of 5 m, the branches glabrous, the young branchlets with few to many, appressed, unequal, ovate to lanceolate, acuminate scales. Leaves oblanceolate, chartaceous, 22 to 35 cm long, 6 to 10 cm wide, the upper surface dark-olivaceous, smooth, the lower surface glabrous, apex acuminate, gradually narrowed from above the middle to the cuneate base, the margins rather finely serrate; lateral nerves 15 to 20 on each side of the midrib, ascending, the reticulations lax, obscure or nearly obsolete; petioles 2 cm long or less. Flowers white, in dense fascicles from tubercles on the trunk, the fascicles up to 7 cm in diameter, the pedicels slender, somewhat furfuraceous, unbranched, 2 to 3.5 cm long, ebracteolate or with a pair of small bracteoles. Sepals glabrous or slightly furfuraceous, not at all setose, elliptic-ovate, 5 to 9 mm long, about 5.5 mm wide, the inner ones slightly exceeding the outer ones and subpetaloid. Petals about 10 mm long and 7 mm wide, the apex retuse. Stamens 20, the anthers 3 mm long. Ovary ovoid, glabrous; style about 4 mm long, the arms usually 3, free or somewhat united at the base.

MINDANAO, Lanao District, near Camp Keithley, *For. Bur.* 3918 *Hutchinson* (type), March 9, 1906, *Clemens* 426, March, 1906, *For. Bur.* 25172 *Alvarez*, March, 1916. In thickets and forests, altitude 700 to 1,000 meters.

A species strongly characterized by its glabrous, or nearly glabrous, oblanceolate leaves, and by its dense, fascicled, cauline inflorescences.

SAURAUIA LANAENSIS sp. nov.

Arbor parva, ramulis petiolisque adpresse setosis, foliis subtus ad costa nervisque adpresse-setulosis; foliis oblanceolatis, 11 ad 20 cm longis, tenuiter acuminatis, deorsum angustatis, basi cuneatis, margine spinulosis, supra glabris, laevis, nervis utrinque 10 ad 12, perspicuis, reticulis distinctis; cymis axillaribus, paucifloris quam petiolo brevioribus, plus minusve setosis; floribus parvis, sepalis leviter subadpresse-setosis, circiter 3 mm longis; ovario glabro; stylis 4, liberis.

A shrub or small tree, 3 to 5 m high, the branchlets appressed-setose with short, brown, lanceolate scales, the petioles and midrib on the lower surface with similar scales. Leaves chartaceous, oblanceolate, 11 to 20 cm long, 3 to 6 cm wide, the apex slenderly acuminate, narrowed to the cuneate base, the margins somewhat spinulose, the upper surface smooth, olivaceous, glabrous, the lower surface paler, appressed-setose with short scales on the midrib and lateral nerves; lateral nerves 10 to 12 on each side of the midrib, distinct, anastomosing, the reticulations evident; petioles 1 to 1.5 cm long. Inflorescences of very short, axillary, solitary or fascicled, few-flowered cymes usually 1 cm or less in length, the rachis and pedicels setose. Flowers white, small, the sepals elliptic-ovate to oblong-ovate, about 3 mm long and 2 mm wide, with few, slender, subappressed setae up to 1 mm in length. Petals narrowly oblong-obovate, about 5 mm long, 2.5 mm wide, the apex somewhat inequilaterally retuse. Anthers about 1.2 mm long. Ovary ovoid, glabrous; styles 4, free, 2 to 2.5 mm long.

MINDANAO, Lanao District, Camp Keithley, *Mrs. Clemens* 868, collected at various times on the forested slopes of Sacred Mountain, altitude about 800 meters: Misamis Province, Mount Malindang, *For. Bur.* 4683 *Mearns & Hutchinson*, May, 1906, in forests, altitude about 700 meters.

Among the Philippine forms this species is well characterized by its oblanceolate, slenderly acuminate leaves, and its short, few-flowered, axillary cymes, and small flowers.

OCHNACEAE

OURATEA Aublet

OURATEA MINDANAENSIS sp. nov.

Arbor parva, glabra; foliis oblongis, coriaceis, 7 ad 11 cm longis, basi rotundatis, apice acutis vel leviter acuminatis, distincte serratis, dentibus tenuiter apiculatis, nervis primariis quam secundariis haud distinctioribus; inflorescentiis terminalibus, floribus umbellatim dispositis, umbellis 2 vel 3; sepalis 3 vel 4, ellipticis ad oblongo-ellipticis rotundatis, 6 ad 7 mm longis; staminibus 8 ad 10, antheris 3 mm longis.

A small glabrous tree, about 4 m high, the branches brownish, slender, terete. Leaves oblong, coriaceous, 7 to 11 cm long, 2 to 4 cm wide, the base rounded, apex acute to somewhat acuminate, margins distinctly toothed, the teeth slenderly apiculate, pointing upward, the upper surface brownish-olivaceous and strongly shining when dry, the lower surface paler and slightly shining; primary lateral nerves scarcely more distinct than are the secondary ones, curved, not prominent, anastomosing, and forming 1 or 2 more or less distinct marginal nerves; petioles up to 5 mm in length. Inflorescences terminal, consisting of 2 or 3 peduncled, umbellike cymes, the peduncles less than 1 cm long, the bracts oblong, about 2.5 mm in length. Flowers few, their pedicels up to 1.5 cm long. Sepals 3 or 4, elliptic to oblong-elliptic, rounded, 6 to 7 mm long. Petals similar to the sepals but thinner, usually 3 or 4. Stamens 8 to 10, their filaments 1 mm long, the anthers linear, 3 mm in length.

MINDANAO, Surigao Province, *Bur. Sci.* 34479 Ramos & Pascasio, April 25, 1919, along streams at low altitudes at the iron deposit on the northeast coast.

In general this species is similar to *Ochna fascicularis* Blanco, but by definition it belongs in the genus *Ouratea* and may be readily distinguished from Blanco's species not only by its floral characters but also by its distinctly and sharply toothed leaves which are rounded at the base.

GUTTIFERAE

CRATOXYLON Blume

CRATOXYLON LIGUSTRINUM (Spach) Blume Mus. Bot. Lugd.-Bat. 2 (1852) 16.

Ancistrolobus ligustrinus Spach Suit. Buff. 5 (1836) 358, Ann. Sci. Nat. II 5 (1836) 352, t. 6.

Hypericum biflorum Lam. Encycl. 4 (1797) 170.

- Hypericum chinense* Retz. Obs. 5 (1789) 27, non Linn.
Hypericum olympicum Lour. Fl. Cochinch. (1790) 471, non Linn.
Hypericum petiolatum Lour. op. cit. 472, non Linn.
Elodes chinensis Hance in Hook. Lond. Journ. Bot. 7 (1848) 472.
Cratoxylon biflorum Turcz. in Bull. Soc. Nat. Mosc. 36¹ (1863) 580.
?Elodea pulchella Hort. Chels. ex Loud. Hort. Brit. Suppl. 1 (1832) 587, *nomen nudum*.
Ancistrolobus brevipes Turcz. in Bull. Soc. Nat. Mosc. 31¹ (1852) 383.
Cratoxylon polyanthum Korth. Verh. Nat. Gesch. Bot. (1839-42) 175, t. 36; Gagnep. in Lecomte Fl. Gén. Indo-Chine 1 (1909) 290.
Cratoxylon chinense Merr. in Philip. Journ. Sci. 4 (1909) Bot. 292.

The earliest description of this species seems to be *Hypericum chinense* Retz. (1789), non Linn., this description being the basis of *Hypericum biflorum* Lam. (1797). *Cratoxylon biflorum* Turcz. is typified by Wallich 4820, this binomial being published without reference to Lamarck's earlier name (sub *Hypericum*), although representing the same species. The two forms described by Loureiro, one from Kwangtung Province, China, and one from Cochinchina, are both safely referable to the form currently known as *Cratoxylon polyanthum* Korth. The oldest specific name, regarding the validity of which there can be no question, appears to be *Cratoxylon ligustrinum* (Spach) Blume. *Elodea pulchella* Hort. Chels. ex Loud. Hort. Brit. Suppl. 1 (1832) 587, currently reduced here, is practically a *nomen nudum*, the whole description being the statement that it is an evergreen, herbaceous, ornamental plant with rosy flowers. The description of it as herbaceous would exclude this as a synonym of *Cratoxylon ligustrinum* Blume, and for that matter would exclude the species from the genus *Cratoxylon*.

CALOPHYLLUM Linnaeus

CALOPHYLLUM CUCULLATUM sp. nov.

Arbor parva, ramulis junioribus petiolisque ferrugineo-hirsutis, ramulis tenuibus, teretibus; foliis coriaceis, oblongis, 11 ad 20 cm longis, distincte acuminatis, basi late rotundatis et distincte cucullatis, petiolo 7 ad 10 mm longo; infructescentiis axillaribus, pedunculatis, circiter 5 cm longis, pedicellatis, plerumque 3 vel 4 flabellatim dispositis; fructibus ovoideis, laevis, 1 cm longis.

A small tree, the branchlets more or less ferruginous-hirsute as are the young petioles; the ultimate branches slender, terete, reddish-brown, 3 to 4 mm in diameter, the internodes up to 15 cm in length. Leaves oblong, coriaceous, smooth, shining, 11 to 20 cm long, 4.5 to 8 cm wide, the apex distinctly acuminate, the base broadly rounded and distinctly cucullate; midrib very

prominent, the lateral nerves slender, very densely arranged; petioles 7 to 10 mm long. Infructescences axillary, peduncled, about 5 cm long, the peduncle 1 to 2 cm long, bearing usually 3 or 4 flabellately arranged pedicels, these up to 2 cm in length. Fruits ovoid, smooth, brown when dry, about 1 cm long.

MINDANAO, Surigao Province, *Bur. Sci.* 34518 Ramos & Pascasio, April 25, 1919, in thickets along streams at the iron deposit on the northeast coast.

Although the flowers of this species are as yet unknown, it seems to belong in the group with *Calophyllum soulattri* Burm. f. (*C. spectabile* Willd.); it is well characterized by its leaves being broadly rounded and conspicuously cucullate at the base.

CALOPHYLLUM OLIGANTHUM sp. nov. § *Apetalum*.

Arbor parva, glabra, ramulis tenuibus, teretibus; foliis oblongo-ellipticis ad oblongo-lanceolatis, coriaceis, 5 ad 10 cm longis, utrinque subaequaliter angustatis, basi cuneatis, apice distincte acuminatis; petiolo 8 ad 10 mm longo; inflorescentiis plerumque axillaribus, solitariis, pedunculatis, 2.5 ad 4 cm longis, floribus 3 ad 5, racemosis vel umbellatis; sepalis interioribus elliptico-obovatis, circiter 6 mm longis, exterioribus late ovatis, 4 mm longis, apice rotundatis et perspicue cucullatis; fructibus ellipsoideis, 1.5 cm longis.

A glabrous tree, 5 to 8 m high, the branches and branchlets slender, dark reddish-brown, terete, the internodes up to 5 cm in length. Leaves oblong, elliptic to oblong-lanceolate, coriaceous, shining, 5 to 10 cm long, 1.5 to 4 cm wide, subequally narrowed to the cuneate base and to the distinctly but blunt-acuminate apex; lateral nerves very slender, densely arranged; petioles 8 to 10 mm long. Inflorescences chiefly axillary, sometimes terminal, solitary, peduncled, 2.5 to 4 cm long, 3- to 5-flowered, the flowers either racemosely or umbellately arranged, their pedicels 1 to 1.5 cm long. Sepals white, the inner 2 elliptic-obovate, rounded, somewhat concave, about 6 mm long and 4 mm wide, the outer 2 broadly ovate, rounded, and conspicuously cucullate at their apices, about 4 mm long. Ovary globose, glabrous; style 3 mm long. Fruits dark brown when dry, nearly smooth, ellipsoid, 1.5 cm long.

BUCAS GRANDE, *Bur. Sci.* 35110 Ramos & Pascasio (type), June 10, 1919. MINDANAO, Surigao Province, *Bur. Sci.* 34520 Ramos & Pascasio, April 25, 1919. In forests at low altitudes, the branches pendulous.

This species very closely resembles *Calophyllum gracilipes* Merr. but the petals are lacking, and it further differs from this

species in having the branches and branchlets terete instead of angled.

CALOPHYLLUM BRACHYPHYLLUM sp. nov.

Arbor parva, glaberrima, ramulis tenuibus, plus minusve angulatis; foliis crasse coriaceis, late ovatis ad elliptico-ovatis, 1.5 ad 2.5 cm longis, basi late rotundatis, apice rotundatis vel retusis; petiolo 1 ad 2 mm longo; fructibus globosis, laevis, 1.5 cm diametro.

A small glabrous tree, or the very tips of the branches obscurely puberulent, the branches grayish, the branchlets slender, usually somewhat angled, reddish-brown. Leaves thickly coriaceous, broadly ovate to elliptic-ovate, 1.5 to 2.5 cm long, 1.2 to 2 cm wide, the base broadly rounded, the apex rounded or often retuse; lateral nerves very slender and very densely arranged; petioles 1 to 2 mm long. Fruits globose, smooth, 1.5 cm in diameter, their peduncles usually solitary, 1 to 2 cm long.

MINDANAO, Surigao Province, *Bur. Sci. 34482 Ramos & Pascasio*, April 25, 1919, on the banks of Ilegapit River at the iron deposit on the northeast coast, altitude about 350 meters.

A species manifestly allied to *Calophyllum pentapetalum* (Blanco) Merr. (*C. amplexicaule* Choisy), but its leaves are not cordate at the base and are distinctly petioled while the fruits are larger and perfectly globose.

KAYEA Wallich

KAYEA LANCEOLATA sp. nov.

Arbor parva, glabra, ramis ramulisque teretibus; foliis coriaceis, lanceolatis, usque ad 23 cm longis, basi acutis vel obtusis, sursum sensim angustatis, tenuiter acute acuminatis, nitidis, nervis primariis utrinque 15 ad 20, tenuibus, quam secundariis vix magis distinctioribus; floribus terminalibus, sessilibus, dense fasciculatis, in siccitate nigris, sepalis obovatis, circiter 7 mm longis.

A small glabrous tree, the branches and branchlets yellowish, terete, smooth. Leaves lanceolate, coriaceous, rather pale and shining when dry, 18 to 23 cm long, 3 to 4 cm wide, base acute to obtuse, gradually narrowed upward from the lower one-fourth or one-third to the slenderly acuminate apex, the acumen acute or acuminate, subcaudate; primary lateral nerves 15 to 20 on each side of the midrib, scarcely more prominent than are the secondary nerves, both surfaces very shallowly foveolate by the rather close reticulations; petioles 1 to 1.5 cm long. Flowers white when fresh, black when dry, sessile, densely crowded in terminal

fascicles 1 to 1.5 cm in diameter. Sepals obovate, about 7 mm long.

LUZON, Camarines Province, Paracale, *Bur. Sci. 33591 Ramos & Edaño*, November 28, 1918, in damp forests at low altitudes.

This species is readily distinguished by its lanceolate leaves, which are gradually narrowed upward to the slenderly subcaudate-acuminate apex, and by its terminal, crowded, sessile, fascicled flowers.

FLACOURTIACEAE

HYDNOCARPUS Gaertner

HYDNOCARPUS HUTCHINSONII sp. nov. § *Euhydnocarpus*, *Oliganthera*.

Arbor, usque ad 15 m alta, partibus junioribus floribusque exceptis glabra; foliis oblongis, coriaceis, 15 ad 25 cm longis, basi distincte inaequilateralibus, apice acuminatis, nervis utrinque 12 ad 14, perspicuis; floribus longe pedicellatis, 5-meris, sepalis pubescens, 9 ad 11 mm longis; petalis glabris, usque ad 13 mm longis, appendicibus linearis, usque ad 10 mm longis; staminibus 5; fructibus globosis, circiter 8 cm diametro, pericarpio fragile, seminibus usque ad 2 cm longis.

A tree, reaching a height of 15 m, glabrous except the younger parts and flowers. Leaves oblong, coriaceous or subcoriaceous, entire, 15 to 25 cm long, 5 to 9 cm wide, the base distinctly inequilateral, usually rounded or obtuse on the broader side and often acute on the narrower side, the apex rather abruptly and distinctly acuminate, the upper surface subolivaceous or brownish, shining, smooth, the lower surface brownish, distinctly reticulate; lateral nerves 12 to 14 on each side of the midrib, prominent, curved, anastomosing close to the margin; petioles usually about 1 cm long. Flowers yellow, the inflorescence axillary, few-flowered, the axils of the inflorescence up to 8 mm long, somewhat pubescent, usually simple; pedicels up to 2 cm long. Sepals 5, from 9 to 11 mm long, pubescent, reflexed in anthesis, oblong-elliptic to elliptic-ovate, rounded. Petals glabrous, up to 13 mm long, about 5 mm wide when spread, ultimately involute and inclosing a linear-oblong, flattened, free appendage up to 10 mm long and 1 mm wide, which is slightly pubescent above and attached by its base only. Stamens 5, the filaments 5 mm long, much thickened below, tapering upward, glabrous; anthers as long as the filaments. Rudimentary ovary pubescent. Fruit globose, about 8 cm in diameter, the pericarp rather thin when dry, brittle, externally puberulent. Seeds numerous, irregular, up to 2 cm in length.

MINDANAO, Zamboanga District, *For. Bur. 4822 Hutchinson*,

For. Bur. 9138, 9158, 9303, 9429 (type) Whitford & Hutchinson: Lanao District, *For. Bur.* 23162, 23178 Agama; Malangas, *Bur. Sci.* 36938, 36943 Ramos & Edaña. BASILAN, *For. Bur.* 3435, 3916, 6116, Hutchinson, *Bur. Sci.* 15436 Reillo, 18959 Miranda.

This species is common in primary forests in various parts of the Zamboanga District and in Basilan. Fruiting specimens have been collected in July, August, September, November, December, and January. Flowering specimens have been collected in December and February. What is apparently the same species is represented by 574 Agama, from near Sandakan, British North Borneo. The local names recorded are *mangasalaokag* (Sul.), *bagarbas* (Lan.), and *kamupang* (Sul.).

BEGONIACEAE

BEGONIA Linnaeus

BEGONIA DOLICHOTRICHA sp. nov. § *Petermannia*.

Herba erecta, ramosa, saltem 50 cm alta, perspicue et patule ciliatis; foliis inaequilateralibus, chartaceis, oblongis ad oblongo-lanceolatis, 8 ad 13 cm longis, tenuiter acuminatis, basi lateraliter cordatis, margine irregulariter grosse dentatis, dentibus ciliatis, utrinque perspicue ciliatis; inflorescentiis circiter 5 cm longis, floribus 3 paucis, sepalis 2, orbiculariovatis, circiter 1.5 cm longis, petalis, 0; capsulis solitariis, obovoideis, 2 cm longis et latis, truncatis, basi abrupte truncato-rotundatis, aequaliter 3-alatis, perspicue ciliatis.

An erect, branched herb, at least 50 cm high, the branches, petioles, leaves, and fruits conspicuously ciliate with long, slender, spreading, scattered, brownish hairs. Leaves thinly chartaceous, inequilateral, oblong to oblong-lanceolate, 8 to 13 cm long, 2.5 to 5 cm wide, the apex slenderly acuminate, the base laterally cordate, one side very broadly rounded, the other much narrower and acute or abruptly obtuse, the margins rather coarsely and irregularly toothed, the primary and secondary teeth terminated by rather long cilia, both surfaces with long, scattered, spreading hairs; petioles 7 to 15 mm long; stipules oblong-elliptic, up to 1.5 cm long, somewhat ciliate, terminated by a long, sparingly ciliate mucro, up to 5 mm in length. Inflorescences in the uppermost axils up to 5 cm long, somewhat peduncled, dichotomously branched, bearing near the base one or few female flowers, and above a few male ones, the bracts narrowly lanceolate, acuminate, 5 mm long or less. Staminate flowers white, the sepals 2, orbicular-ovate or somewhat reniform, rounded, up to 1.5 cm wide and nearly as long. Petals

none. Stamens numerous, the anthers obovoid, about 1 mm long, shorter than the filaments. Capsules usually solitary, in outline obovoid, including the wings about 2 cm long and 2 cm wide at the truncate apex, somewhat narrowed below, the base abruptly truncate-rounded, the wings subequal, conspicuously ciliate with long, scattered, brownish hairs.

LUZON, Camarines Province, Mount Bagacay, *Bur. Sci.* 33855, 33926 (type) *Ramos & Edaño*, December 18, 1918, on forested slopes, altitude about 650 meters, the leaves when fresh very red on the lower surface but merely brownish or brownish-red when dry.

This species is probably as closely allied to *Begonia macgregorii* Merr. as to any other described form. It is easily distinguishable by its numerous cilia and especially by its ciliate capsules.

BEGONIA LONGIBRACTEA sp. nov. § *Petermannia*.

Herba erecta, ramosa, saltem 40 cm alta, ramis perspicue subadpresse ciliatis; foliis membranaceis, inaequilateralibus, oblongo-obovatis, 6 ad 14 cm longis, profunde et irregulariter pinnatim lobatis, lobis usque ad 2.5 cm longis, plerumque grosse 1- vel 2-dentatis, apice tenuiter acuminatis, basi lateraliter cordatis; inflorescentiis axillaribus, solitariis, racemosis, circiter 1 cm longis, bracteis numerosis anguste lanceolatis leviter ciliatis, 8 ad 10 mm longis instructis; floribus ♂ paucis, sepalis 2, elliptico-ovatis, 5 mm longis, petalis 2, quam sepalis multo angustioribus; capsulis solitariis, 10 ad 12 mm longis, usque ad 15 mm latis, truncatis, basi late rotundatis, aequaliter 3-alatis, leviter ciliatis.

An erect, somewhat branched herb, at least 40 cm high, the lower nodes often rooting, the branches rather conspicuously subappressed-ciliate, the leaves slightly so. Leaves greenish when dry, membranaceous, in outline oblong-obovate, 6 to 14 cm long, 2 to 7 cm wide, conspicuously inequilateral, deeply and irregularly pinnately lobed, the lobes up to 2.5 cm long and often coarsely 1- or 2-toothed, the apex long and slenderly acuminate, the acumen toothed, the base somewhat narrowed, laterally cordate, one side rounded, the other usually acute, the upper surface with few, scattered, elongated hairs, the lower somewhat appressed-hirsute on the midrib and veins; petioles 5 mm long or less; stipules narrowly lanceolate, acuminate, about 8 mm long, sparingly ciliate. Inflorescences axillary, of short, few-flowered, simple racemes, the axils, 1 cm long or less, supplied with numerous, narrowly lanceolate, long, acuminate, somewhat ciliate

bracts, 8 to 10 mm in length and about 1.5 mm wide. Male flowers pinkish-white, their pedicels up to 10 mm in length. Sepals 2, elliptic-ovate, slightly ciliate, about 5 mm long. Petals 2, narrowly elliptic-oblong, about 3.5 mm long, 1.5 mm wide. Capsules solitary, axillary, including the wings 10 to 12 mm long and 12 to 15 mm wide, the apex truncate, the outer angles acute, slightly narrowed below to the rather broadly rounded base, sparingly ciliate.

SIARGAO, *Bur. Sci.* 34870 Ramos & Pascasio, May 27, 1919, among boulders on forested slopes at low altitudes.

A species similar and distinctly allied to *Begonia urdanetensis* Elm. but with larger leaves, quite different indumentum, and narrower stipules.

THYMELAEACEAE

GYRINOPSIS Decaisne

GYRINOPSIS ACUMINATA sp. nov.

Frutex, floribus exceptis glaber, foliis anguste lanceolatis ad lanceolatis, 12 ad 20 cm longis, tenuiter acuminatis, basi cuneatis, nervis numerosis, dense dispositis; floribus axillaribus, fasciculatis, leviter pubescens, circiter 5 mm longis; capsulis circiter 1 cm longis, rugosis, obovoideis.

A shrub or small tree, entirely glabrous except the flowers, the branchlets usually reddish-brown. Leaves narrowly lanceolate to lanceolate, 12 to 20 cm long, 2.5 to 4.5 cm wide, narrowed to the cuneate base and to the slenderly acuminate apex, greenish or olivaceous and shining when dry. The primary lateral nerves scarcely distinguishable from the densely arranged secondary ones; petioles 5 mm long or less. Flowers axillary, fascicled or in very greatly reduced cymes, their pedicels about 2.5 mm long. Perianth slightly pubescent, about 5 mm long, the lobes 5, oblong, obtuse, about 1.5 mm long. Stamens 10 in a single row near the throat, 5 alternating anthers slightly longer than the others. Ovary oblong-ovoid, narrowed upward, pubescent; style very short. Capsules yellowish, rugose when dry, 1 cm long or less, 2-valved, usually containing a single, subglobose, black seed, 5 to 6 mm in diameter.

DINAGAT, *Bur. Sci.* 35158 Ramos & Pascasio (type), May 13, 1919. BUCAS GRANDE, *Bur. Sci.* 35055 Ramos & Pascasio, June 11, 1919, in forests at low altitudes.

This species is closely allied to *Gyrinopsis brachyantha* Merr., from which it is distinguished by its longer, slenderly acuminate, differently shaped leaves.

COMBRETACEAE

TERMINALIA Linnaeus

TERMINALIA SURIGAENSIS sp. nov. § *Diptera*.

Arbor parva, glabra, ramulis incrassatis, 1 ad 1.5 cm diametro, cicatricibus multis instructis; foliis numerosis, confertis, coriaceis, anguste oblongo-obovatis ad oblanceolatis, 10 ad 14 cm longis, basi cuneatis, apice obtusis ad rotundatis, nervis utrinque circiter 10, tenuibus; inflorescentiis simplicibus, 7 ad 13 cm longis; fructibus 2-alatis, late ellipticis, 1.5 ad 1.8 cm longis et latis, apice retusis apiculatisque.

A glabrous tree, about 6 m high, the ultimate branchlets thickened, 1 to 1.5 cm in diameter, marked with numerous crowded scars of fallen leaves. Leaves densely crowded at the tips of the branchlets, narrowly oblong-obovate to oblanceolate, 10 to 14 cm long, 2 to 5 cm wide, coriaceous, shining, yellowish-green or brownish when dry, gradually narrowed to the cuneate base, the apex obtuse to rounded; lateral nerves about 10 on each side of the midrib, slender; petioles 1 to 1.5 cm long, usually with 2 rather conspicuous glands. Inflorescences axillary, simple, 7 to 13 cm long. Flowers reddish. Calyx funnel-shaped, glabrous, about 5 mm long, the teeth 5, triangular, acute. Fruits 2-winged, including the wings broadly elliptic, 1.5 to 1.8 cm long and nearly as wide, the apex retuse and reticulate, base rounded, the seed-bearing portion of the fruit plane on one side and somewhat keeled on the other, the wings coriaceous.

MINDANAO, Surigao Province, *Bur. Sci.* 34711 (type), 34600, Ramos & Pascasio, April 25 and June 15, 1919, along streams at low altitudes ascending to 350 meters.

A species very similar in appearance and very closely allied to *Terminalia darlingii* Merr., from which it is distinguished by its smaller leaves and fruits.

MELASTOMATACEAE

MEDINILLA Gaudichaud

MEDINILLA CAPITATA sp. nov.

Frutex epiphyticus, scandens, ramis ramulisque teretibus, partibus junioribus stellato-pubescentibus; foliis oppositis, subsessilibus, penninerviis, obovato-ellipticis, usque ad 13 cm longis, acuminatis, basi rotundatis vel obscure cordatis, nervis utrinque 3; inflorescentiis lateralibus, solitariis, 2 ad 2.5 cm longis, subglobosis ad ovoideis, densis; floribus 5-meris, racemosis; bracteis ovatis-obovatis ad spatulatis, 10 ad 13 mm longis.

A slender, epiphytic, scandent shrub, the stems frequently emitting roots, the branches and branchlets terete, the latter, and the petioles and leaves on the midrib beneath, distinctly stellate-pubescent with short brown hairs. Leaves opposite, penninerved, obovate-elliptic, subsessile, 10 to 13 cm long, 5 to 9 cm wide, the apex shortly acuminate, the base somewhat narrowed, rounded or obscurely cordate; midrib prominent, the lateral nerves leaving it in the lower 2 to 4 cm, distinct, ascending, usually 3 on each side of the midrib, the inner pairs extending to the apex; petioles 2 mm long or less. Inflorescences lateral, solitary, subsessile, the flowers densely arranged in simple, globose to ovoid racemes, 2 to 2.5 cm long, each flower subtended by an obovate to spatulate, red, slightly pubescent bracteole, 10 to 13 mm in length. Pedicels short. Calyx urceolate, about 7 mm long and 5 mm in diameter, slightly stellate-pubescent, the limb produced, obscurely 5-toothed. Ovary 5-celled.

DINAGAT, *Bur. Sci.* 35179, Ramos & Pascasio, May 11, 1919, on tree trunks in forests at low altitudes.

A remarkably characteristic species not closely allied to any previously described form, distinguishable by its subsessile, penninerved, opposite leaves; its stellate, brownish, rather sparse indumentum; and its dense, lateral, subcapitate, simple racemes of 5-merous flowers.

MEDINILLA CONFERTIFLORA sp. nov.

Frutex erectus, glaberrimus, ramulis teretibus, foliis oppositis, sessilibus, oblongo-obovatis ad oblongo-lanceolatis, usque ad 20 cm longis, tenuiter acuminatis, basi perspicue angustatis, penninerviis, nervis utrinque 4; inflorescentiis caulinis, ramosis, circiter 7 cm longis, densissime multifloris et multibracteatis, bracteis angustis obovatis ad spatulatis usque ad 15 mm longis; floribus 4-meris.

An erect, entirely glabrous shrub, about 3 m high, with terete stems and opposite, sessile leaves. Leaves chartaceous when dry, oblong-obovate to oblong-lanceolate, 14 to 20 cm long, 5 to 10 cm wide, olivaceous, penninerved, the apex slenderly acuminate, narrowed below to the rounded base, the narrow basal portion of the leaf 2 to 5 cm in length and 1.5 to 3 cm in width; lateral nerves usually 4 on each side of the midrib, leaving it in the lower half, ascending, the inner two pairs reaching the apex or nearly so, the transverse reticulations distant, parallel, prominent. Inflorescences from the trunks, woody, branched, about 7 cm long, densely many-flowered and multibracteate, the bracts narrowly obovate to spatulate, glabrous, up to 15 mm long, the

younger ones red when dry, the older ones greenish. Flowers 4-merous, their pedicels up to 6 mm long. Calyx urceolate, up to 6 mm long, the limb much produced and about 3 mm long, obscurely 4-toothed, the teeth broad, nerved. Stamens 8, equal. Ovary 4-celled.

PANAY, Capiz Province, Libacao, *Bur. Sci.* 35413 Martelino & Edaño, June 3, 1919, on forested slopes at low altitudes.

This species belongs in the group with *Medinilla trunciflora* Merr. and *M. aurantiaca* Elm., but differs from both in being entirely glabrous.

MEDINILLA FERRUGINEA sp. nov.

Frutex scandens, partibus junioribus dense ferrugineo-villosis, ramulis teretibus, foliis oppositis, in paribus valde inaequalibus; foliis majoribus, lanceolatis ad oblongo-lanceolatis, penninerviis, acuminatis, basi angustatis, acutis, usque ad 20 cm longis, nervis utrinque 3, perspicuis, breviter petiolatis; foliis minoribus late ovatis, acuminatis, basi profunde cordatis, sessilibus, 1 ad 2 cm longis; inflorescentiis lateralibus, solitariis vel fasciculatis, racemosis, 2 ad 3 cm longis, bracteis numerosis, ovatis ad oblongo-ovatis, villosis, 10 ad 12 mm longis; floribus 4-meris.

A scandent shrub, with terete branches and branchlets, and opposite, very unequal leaves, the smaller leaves of each pair often deciduous on the older stems, the branchlets, petioles, inflorescences, and the younger leaves rather densely ferruginous-pilose with long, weak, spreading hairs. Leaves chartaceous, the larger ones of each pair lanceolate to oblong-lanceolate, penninerved, slenderly acuminate, narrowed below to the obtuse or acute base, 14 to 20 cm long, 3 to 6 cm wide, the lateral nerves usually 3 on each side of the midrib and leaving it in the lower 2 to 4 cm, sharply ascending, prominent, the transverse reticulations distinct; petioles 7 mm long or less. Smaller leaves of each pair broadly ovate, acuminate, deeply cordate at the base, the sinus narrow, the lobes broadly rounded, of the same texture and with the same type of indumentum as the larger leaves, 1 to 2 cm long, sessile. Inflorescences chiefly from the branches below the leaves, solitary or fascicled, consisting of short, chiefly simple racemes, 2 to 3 cm in length, supplied with numerous, ovate to oblong-ovate, acute or acuminate, villous, 10 to 12 mm long bracts, two bracts subtending each flower. Calyx villous, ovoid, the limb slightly produced, obscurely and shallowly 4-toothed. Stamens 8, apparently equal. Ovary 4-celled.

DINAGAT, Bucas Grande, *Bur. Sci.* 35217 (type), 35048, 35223

Ramos & Pascasio, May and June, 1919, in forests at low altitudes.

A species remarkable for its ferruginous indumentum and its very unequal leaves, the opposite one of each pair being reduced to a broadly obovate, acuminate, deeply cordate, sessile one, entirely different in shape and size from the other of the same pair.

MEDINILLA PURPUREA Elm. in herb. sp. nov.

Frutex scandens, nodis densissime longeque setosis exceptis glaberrimis, ramis teretibus; foliis oppositis, coriaceis, valde inaequalibus, majoribus oblongo-ovatis ad oblongo-ellipticis, petiolatis, usque ad 25 cm longis et 12 cm latis, basi cordatis vel rotundatis, perspicue 7-plinerviis, apice perspicue acuminatis, nervis transversalibus obsoletis, minoribus ovatis, sessilibus, 2 ad 3 cm longis, vel obsoletis. Inflorescentiis axillaribus, longe pedunculatis, capitatis, 4 ad 5 cm diametro, pedunculo usque ad 2 cm longo, bracteis numerosissimis, obovatis, usque ad 1.5 cm longis; floribus 4-meris.

A scandent shrub, entirely glabrous except the densely long-setose nodes, the branches terete, the numerous, rather soft setae at the nodes 1 to 3 cm in length. Leaves opposite, in very unequal pairs, or the smaller one of each pair sometimes obsolete; larger leaves coriaceous, oblong-ovate to oblong-elliptic, pale or somewhat olivaceous when dry, shining, 22 to 26 cm long, 8 to 12 cm wide, the base more or less cordate, sometimes rounded, prominently 7-plinerved, the inner two pairs of nerves reaching the apex, the transverse nerves and reticulations obsolete, the apex rather abruptly and prominently acuminate, the acumen slender, blunt, up to 1.5 cm long; petioles 1 to 1.5 cm long; smaller leaves of each pair same in texture as the larger ones, ovate, sessile, 2 to 3 cm long, 1 to 2 cm wide, frequently wanting. Inflorescences axillary, solitary, long-peduncled, the flowers crowded in dense, globose to ovoid heads at the ends of the peduncles, the latter 12 to 20 cm long, the heads 4 to 5 cm in diameter. Flowers 4-merous, their pedicels up to 4 mm long, the bracts very numerous, obovate, often retuse, red or purple, up to 15 mm long and 10 mm wide. Calyx truncate. Petals 4, obovate, at least 1 cm long. Stamens 8, unequal, the anthers lanceolate-acuminate, 6 mm long, the appendages and spur short. Fruit ovoid, up to 1.5 cm long.

LUZON, Sorsogon Province, Mount Kililibong, *Bur. Sci.* 23701 *Ramos* (type), August, 1919: Tayabas Province, Mount Cadig, *Bur. Sci.* 25461 *Yates*, December 12, 1916. CATANDUANES,

Mount Mariguison, *Bur. Sci.* 30526 Ramos, November, 1917. On trees in the mossy forests at and above an altitude of 700 meters.

A remarkable species, entirely different from all other known representatives of the genus, strongly characterized by its densely long-setose nodes; its remarkably unequal leaves, the smaller leaf of each pair being very greatly reduced or even obsolete; and by its long-peduncled, capitate, densely bracteate inflorescences. The name *Medinilla purpurea* was applied by Mr. Elmer to 23701 Ramos with reference to material collected by him in Sorsogon that represented the same species. Unfortunately Mr. Elmer's material was lost and, as the duplicates of the specimen cited above have been distributed under his manuscript name, the description is accordingly published here.

MEDINILLA UMBELLATA sp. nov.

Frutex scandens, partibus junioribus minute castaneo-furfuraceis, ramulis teretibus, foliis verticillatis, sessilibus, obovatis, usque ad 23 cm longis, apice abrupte breviter acuminatis, basi angustatis, penninerviis, nervis utrinque 3, valde perspicuis; inflorescentiis lateralibus, umbellatis, pedunculatis, pedunculato 5 cm longo; floribus circiter 15, pedicellatis, 5-meris, bracteis anguste oblanceolatis, circiter 1 cm longis.

A scandent shrub with terete branchlets, verticillate, obovate, penninerved, sessile leaves, and lateral, simple, peduncled, umbellate inflorescences, the indumentum, chiefly confined to the inflorescences and the younger parts, consisting of very short, dark-brown, furfuraceous hairs. Leaves usually 4 at each node, sessile, obovate, 20 to 23 cm long, 12 to 14 cm wide, chartaceous to subcoriaceous, the upper surface olivaceous, the lower usually brownish, abruptly and shortly acuminate, narrowed below to the obtuse base, the narrow basal portion up to 5 cm long, at the very base not exceeding 1 cm in width, penninerved, the lateral nerves usually 3, leaving the midrib in the lower half, ascending, curved, the inner 2 pairs reaching the apex, the transverse reticulations distant, very prominent, the upper surface glabrous, the midrib on the lower surface very sparingly brown-furfuraceous. Inflorescences from leafless nodes, apparently solitary, simple, umbellate, their peduncles about 5 cm long, each bearing 15 or fewer flowers, the subtending bracts narrowly oblanceolate, about 1 cm long, the pedicels about 5 mm long, all parts distinctly but minutely furfuraceous-pubescent with dark-brown hairs. Buds ellipsoid, about 7 mm long; calyx obscurely 5-toothed.

MINDANAO, Surigao Province, *Bur. Sci.* 34744 (type), 34773 *Ramos & Pascasio*, June 20, 1919, along streams in forests at low altitudes.

This characteristic species is as closely allied to *Medinilla furfuracea* Merr. as to any other described form, but differs radically in its sessile, entirely differently shaped leaves, and different inflorescences.

ARALIACEAE

ANOMPANAX Harms

ANOMPANAX PHILIPPINENSIS Harms in *Ann. Jard. Bot. Buitenz.* 19 (1904) 15.

Pentapanax sp. Ceron Cat. Pl. Herb. Manila (1892) 89.

The type of this species is *Warburg* 14470, from Davao, Mindanao, and it is by no means certain that the species is really different from the type of the genus, *Anompanax celebicus* Harms. Regarding the latter, I examined Koorders's Celebes material in the Buitenzorg herbarium in January, 1914, noting that the Celebes material looks exactly like the Philippine specimens and that the two species were either identical or very closely allied. *Anompanax philippinensis* is now known from a number of localities in the central and southern Philippines, as follows: SAMAR, *Bur. Sci.* 17454 *Ramos*. NEGROS, *For. Bur.* 17355 *Curran*, 7269, 12329 *Everett*, *Merrill* 7034. PANAY, *Vidal* 2930 in *Herb. Kew.*, *Yoder*, *Bur. Sci.* 30798 *Ramos & Edaño*, 32354 *McGregor*. MINDANAO, *Merrill* 8293, *Clemens* 1058, *For. Bur.* 4686 *Mearns & Hutchinson*. BASILAN, *For. Bur.* 18936 *Miranda*. A species widely scattered on damp forested slopes at medium altitudes.

ANOMPANAX CUMINGIANUS (Presl) comb. nov.

Paratropia cumingiana Presl *Epim.* (1851) 250; *Walp. Ann.* 2 (1852) 725.

Panax cumingiana Rolfe in *Journ. Linn. Soc. Bot.* 21 (1884) 310.

Polyscias cumingiana F.-Vill. *Novis. App.* (1880) 102.

Nothopanax cumingii Seem. in *Journ. Bot.* 4 (1866) 295.

MINDORO, *Cuming* 1553.

Seemann, l. c., records this species also from Borneo, but I have seen no material representing it other than Cuming's collection, the type of the species. My specimen is incomplete, but the ovary is always 2-celled and, although the calyx is truncate, not at all toothed or lobed, I feel confident that *Anompanax* is its correct generic position. It certainly cannot properly be placed in any of the other genera to which it has been assigned by various botanists.

ANOMPANAX DIGITATUS sp. nov.

Frutex erectus, parvus, glaber; foliis longipetiolatis, digitatim 5-foliolatis, foliolis exterioribus subsessilibus, interioribus longipetiolulatis, membranaceis, oblongo-ovatis ad oblongo-ellipticis, acutis vel acuminatis, 12 ad 24 cm longis, nervis utrinque 6 ad 12; inflorescentiis brevibus, circiter 10 cm longis, ramis primariis 2 vel 3, ramis secundariis umbellatim dispositis; calycis ovoideis, circiter 5 mm longis, 5-dentatis, dentibus acutis, 1 mm longis.

An erect, slender shrub, the ultimate branches about 5 mm in diameter. Leaves long-petioled, digitately 5-foliolate, the outer two leaflets sessile or nearly so, the inner three with petiolules 3 to 5 cm in length; petioles 12 to 15 cm long, inflated and clasping at the base; leaflets membranaceous or thinly chartaceous, shining, oblong-ovate to oblong-elliptic, 12 to 24 cm long, 5 to 10 cm wide, the apex acute or obscurely but sharply acuminate, the base often somewhat inequilateral, acute or acuminate; lateral nerves slender, 6 to 12 on each side of the midrib. Inflorescences short, about 10 cm long, the peduncle about 1 cm in length with 2 or 3 primary branches, these bearing from 4 to 7 secondary, umbellately arranged, 1 to 2 cm long branchlets; the flowers subumbellately or racemosely arranged toward the tips of the branchlets, their pedicels about 5 mm long, jointed. Calyx after flowering ovoid, about 5 mm long, 5-toothed, the teeth oblong-ovate, acute, 1 mm long. Ovary 2-celled; styles 2, stout, somewhat recurved, about 1.5 mm long.

SIARGAO, *Bur. Sci.* 34925 Ramos & Pascasio, June 2, 1919, in forests at low altitudes, the height indicated as 0.5 meter.

This species differs from *Anompanax philippinensis* Harms in its smaller size, its strictly digitate leaves, fewer leaflets, and in its short, comparatively simple inflorescences.

BOERLAGIODENDRON Harms**BOERLAGIODENDRON DINAGATENSE** sp. nov.

Frutex glaber, circiter 2 m altus, ramulis ultimis circiter 5 mm diametro; foliis oblongis ad oblongo-ellipticis, coriaceis, 14 ad 18 cm longis, basi acutis vel obtusis, apice plerumque acutis, marginae leviter undulatis et minute denticulatis, penninerviis, nervis utrinque circiter 12, tenuibus, petiolo 2 ad 2.5 cm longo; inflorescentiis circiter 7 cm diametro, breviter pedunculatis, ramis primariis circiter 15, umbellatim dispositis, ramis secundariis circiter 2 cm longis, fructibus umbellatim dispositis, ovoideis, circiter 5 mm longis.

A glabrous shrub, about 2 m high, the ultimate branchlets about 5 mm in diameter. Leaves coriaceous, oblong to oblong-elliptic, 14 to 18 cm long, 5 to 7 cm wide, somewhat narrowed below to the acute or obtuse base, the apex usually acute, margins somewhat undulate and minutely toothed in the sinuses of the undulations; lateral nerves slender, pinnately arranged, about 12 on each side of the midrib, not very prominent; petioles 2 to 2.5 cm long, their bases with a single, obscure, unarmed crest. Inflorescences terminal, about 7 cm in diameter, the peduncle rather slender, about 2 cm long; primary branches about 15, umbellately arranged, these bearing 2 lateral branches and a central, nearly sessile, or short-peduncled umbel of sterile flowers, the lateral branches jointed at about the middle and bearing 2 small bracts. Fruits umbellately arranged at the tips of the lateral branchlets, ovoid, about 5 mm long, their pedicels 2 to 3 mm in length; seeds usually 3.

DINAGAT, *Bur. Sci.* 35220 Ramos & Pascasio, May 12, 1919, in forests at low altitudes.

This species is distinctly an ally of *Boerlagiodendron simplicifolium* Elm. and, like it, is characterized by its oblong, entire, pinnately nerved leaves; among other characters it differs radically from the latter species in its much shorter petioles.

MYRSINACEAE

DISCOCALYX Mez

DISCOCALYX LONGISSIMA sp. nov.

Frutex glaber, circiter 1 m altus; foliis numerosis, linearis, integris, 18 ad 25 cm longis, 7 ad 14 mm latis, utrinque angustatis, acuminatis, subtus glandulosis, breviter petiolatis; racemis brevibus, tenuibus, paucifloris, 1 ad 1.5 cm longis, in ramulis axillaribus tenuibus dispositis, ramulis specialibus 12 ad 16 cm longis, foliis paucis valde reductis instructis, partibus apicalibus cicatricibus bracteisque multis instructis; floribus minutus, 5-meris, sepalis perspicue glandulosis.

A glabrous shrub, about 1 m high, the branches smooth, terete, brownish, the ultimate ones about 1 mm thick. Leaves numerous, linear, entire, 18 to 25 cm long, 7 to 14 mm wide, narrowed to the acuminate apex, the base much narrowed and abruptly acute or obtuse, olivaceous and shining when dry, distinctly glandular-punctate beneath, the midrib very prominent, the reticulations rather close, distinct; petioles stout, 3 mm long or less. The specialized slender branches bearing the inflorescences axillary, solitary, 12 to 16 cm long, each supplied with

2 or 3 greatly reduced, narrowly lanceolate leaves about 1.5 cm in length, the apical 1 to 2 cm slightly thickened, about 1.5 mm in diameter, these thickened parts supplied with many narrowly lanceolate, acuminate bracts 5 to 10 mm in length and marked with numerous scars of fallen bracts, this thickened portion bearing 1 or 2 slender, few-flowered racemes 1 to 1.5 cm long. Flowers 5-merous, reddish; the sepals narrowly oblong, about 1 mm long, with few, large, prominent glands.

MINDANAO, Surigao Province, *Bur. Sci.* 34456 *Ramos & Pascasio*, April 14, 1919, on rocky forested slopes at low altitudes.

This species is similar and manifestly closely allied to *Dis-cocalyx angustissima* Merr., from which it is distinguished by its entire leaves.

EBENACEAE

DIOSPYROS Linnaeus

DIOSPYROS LONGICILIATA sp. nov.

Frutex parvus, ramulis et petiolis et foliis perspicue longe ciliatis, ramis ramulisque tenuibus; foliis chartaceis, oblongo-lanceolatis, 9 ad 16 cm longis, basi rotundatis, apice tenuiter acute acuminatis, nervis utrinque circiter 12; floribus longe ciliatis, axillaribus, solitariis, sessilibus, calycis tubo brevissimo, lobis lanceolatis, acuminatis, circiter 4 mm longis; ovario densissime ciliato.

A small shrub, the branchlets, petioles and portions of the leaves prominently ciliate with long, slender, spreading hairs, these hairs usually about 2 to 3 mm in length. Branches slender, erect, glabrous, black when dry. Leaves oblong-lanceolate, chartaceous, 9 to 16 cm long, 2 to 3.5 cm wide, brownish-olivaceous when dry, base rounded, apex rather slenderly and sharply acuminate, both surfaces and the margins long-ciliate with scattered hairs, these more numerous on the midrib than on other parts of the leaf; lateral nerves slender, about 12 on each side of the midrib, anastomosing, the reticulations lax, distinct; petioles about 3 mm long. Pistillate flowers solitary, axillary, sessile, 4-merous. Calyx-tube very short, the lobes lanceolate, prominently long-acuminate from a broad base, about 4 mm long, conspicuously long-ciliate. Corolla reddish, the tube about 5 mm long, externally long-ciliate, the lobes oblong, about 6 mm in length. Staminodes 4. Ovary very densely ciliate with long ascending hairs up to 4 mm in length; style densely hirsute below.

DINAGAT, *Bur. Sci.* 35189, *Ramos & Pascasio*, May 11, 1919, in forests at low altitudes.

A species, prominently characterized by its numerous, long, spreading hairs, closely allied to *Diospyros everettii* Merr., one that has the same type of indumentum. The present species differs from the latter in its much thinner, more-numerously nerved leaves and in the much more conspicuous and denser indumentum which is found on the branchlets, petioles, both surfaces of the leaves, and the flowers, while in *D. everettii* the hairs are few in number and are practically confined to the branchlets and flowers.

LOGANIACEAE

GENIOSTOMA Forster

GENIOSTOMA LANCILIMBUM sp. nov.

Arbor parva, glabra, ramis teretibus, tenuibus; foliis lanceolatis ad oblongo-lanceolatis, 7 ad 10 cm longis, utrinque angustatis, basi acutis, apice caudato-acuminatis, chartaceis, nervis utrinque circiter 7, reticulis subobsoletis; floribus axillaribus, solitariis, pedicellatis; fructibus subglobosis, 6 ad 8 mm diametro.

A glabrous shrub or small tree, 3 to 4 m high, the branches and branchlets terete, slender, the former grayish, the latter often black when dry. Leaves lanceolate to oblong-lanceolate, 7 to 10 cm long, 1.5 to 3 cm wide, narrowed below to the acute base and above to the slender, caudate-acuminate apex, chartaceous, shining, olivaceous or black when dry, the midrib distinct; lateral nerves slender, indistinct, usually about 7 on each side of the midrib, obscurely anastomosing, the reticulations obsolete or nearly so; petioles 3 to 6 cm long. Flowers white, axillary, solitary, their pedicels about 5 mm long. Calyx 2.5 to 3 mm in diameter, the lobes 5, glabrous, broadly triangular-ovate, acute, about 1 mm long, their margins very obscurely ciliate. Corolla-tube 3 mm long, the lobes reflexed, oblong-ovate, 2 mm long, the throat densely villous inside. Fruits subglobose, black when dry, 6 to 8 mm in diameter.

PANAY, Capiz Province, Libacao, *Bur. Sci.* 35332 (type), 35344 Martelino & Edaño, May 28, 1919, in open forests at low altitudes.

In its axillary, solitary flowers this species is apparently allied to *Geniostoma longipes* Merr., but is radically different from that species in its vegetative and other characters.

GENIOSTOMA RAMOSII sp. nov.

Frutex erectus, 3 m altus, inflorescentiis exceptis glaber; foliis membranaceis, oblongo-ellipticis, 10 ad 13 cm longis, breviter acuminatis, basi rotundatis et leviter decurrentibus, nervis utrinque circiter 8, tenuibus, distinctis; floribus fasciculatis,

pedicellatis, calycis lobis triangulari-ovatis, acutis, 2 mm longis; fructibus subglobosis, circiter 5 mm diametro.

An erect shrub, about 3 m high, glabrous except the inflorescences, the branches and branchlets terete, pale. Leaves membranaceous, oblong-elliptic, nearly black when dry, 10 to 13 cm long, 4 to 6.5 cm wide, the base rounded to subacute or somewhat decurrent, the apex shortly but distinctly acuminate; lateral nerves slender, distinct, anastomosing, about 8 on each side of the midrib, the reticulations lax, not prominent; petioles 1 cm long. Flowers axillary, fascicled, their pedicels somewhat pubescent, about 7 mm long. Calyx about 5 mm long, the lobes pubescent, triangular-ovate, acute, 2 mm in length. Fruits 4 to 10 in each fascicle, subglobose, black when dry, about 5 mm in diameter, when young somewhat pubescent, ultimately glabrous, their pedicels up to 8 mm in length.

SIARGAO, *Bur. Sci.* 34893 Ramos & Pascasio, May 29, 1919, in forests at low altitudes.

A species closely allied to *Geniostoma nigrescens* (Blanco) Merr. but with the exception of the inflorescences entirely glabrous and with larger leaves.

APOCYNACEAE

ALYXIA Banks

ALYXIA STENOPHYLLA sp. nov.

Frutex scandens, glabra, ramis ramulisque teretibus, tenuibus, ultimis 1 ad 1.5 mm diametro; foliis plerumque verticillatis, 4 ad 6 cm longis, 6 ad 10 mm latis, anguste lanceolatis, utrinque subaequaliter angustatis, basi acutis, apice obtuse acuminatis, chartaceis vel subcoriaceis, nervis lateralibus obsoletis; inflorescentiis axillaribus, solitariis, pedunculatis, umbellatim 3- vel 4-floris, pedunculo 1 ad 1.5 cm longo. Corollae tubo 7 mm longo.

A glabrous vine, the branchlets slender, terete, the ultimate ones 1 to 1.5 mm in diameter. Leaves mostly verticillate, sometimes opposite, narrowly lanceolate, 4 to 6 cm long, 6 to 10 mm wide, subequally narrowed to the acute base and the blunt-acuminate apex, firmly chartaceous or subcoriaceous, shining when dry, the margins slightly recurved; midrib prominent, the lateral nerves and reticulations obsolete; petioles 2 to 3 mm long. Inflorescences axillary, solitary, umbellately 3- or 4-flowered, the peduncles 1 to 1.5 cm long, the pedicels about 3 mm long, 2-bracteolate at their apices, the bracteoles lanceolate, acuminate, 1 mm long. Calyx about 3 mm long, the lobes lanceolate-acuminate. Corolla-tube about 7 mm long, white.

PANAY, Capiz Province, Mount Salibongbong, *Bur. Sci.* 35574 Martelino & Edaño, June 19, 1919. In thickets and forests near the summit, altitude about 650 meters.

This species resembles *Alyxia blancoi* Merr. but is easily distinguished by its longer peduncles and by its terete, not 4-angled, branchlets; it differs from *Alyxia lanceolata* Merr. in its glabrous inflorescences.

ALYXIA OBOVATIFOLIA sp. nov.

Frutex scandens, partibus junioribus pubescens, ramulis acute 4-angulatis; foliis verticillatis, crasse coriaceis, obovatis ad oblongo-obovatis, 4 ad 6 cm longis, apice late rotundatis, deorsum angustatis, basi cuneatis, margine valde recurvatis, nervis lateralibus obsoletis; floribus axillaribus, sessilibus vel subsessilibus, plerumque binis, calycis pubescens, corollae tubo circiter 1 cm longo.

A scandent vine, the branchlets sharply 4-angled, the internodes 2 to 4 cm long, the younger parts somewhat pubescent. Leaves verticillate, usually 4 at each node, thickly coriaceous, obovate to oblong-obovate, shining, 4 to 6 cm long, 1.5 to 2.5 cm wide, the apex broadly rounded and sometimes slightly retuse, narrowed below to the cuneate base, the margins strongly recurved, the midrib prominent, the lateral nerves obsolete, the mature leaves glabrous, the very young ones somewhat pubescent; petioles about 5 to 7 mm long. Flowers white, axillary, usually in pairs, sessile or subsessile, the calyx pubescent, the lobes lanceolate, acuminate, about 1.5 mm long. Corolla-tube glabrous, about 1 cm in length.

MINDANAO, Surigao Province, *Bur. Sci.* 34492 Ramos & Pascasio, April 25, 1919, in rather dry thickets along small streams at low altitudes at the iron deposit on the northeast coast.

A species strongly characterized by its thickly coriaceous, obovate to oblong-obovate, rounded, nerveless leaves, and its very short, axillary, usually 2-flowered inflorescences. It is not closely allied to any previously described form.

KIBATALIA G. Don

(*Kickxia* Blume, non Dumortier)

In 1827 Dumortier published the generic name *Kickxia* for a small group of scrophulariaceous plants which some subsequent botanists have placed in *Linaria*. This disposition of Dumortier's genus is by no means universally accepted and some European and American botanists maintain *Kickxia* Dum. as a valid genus in spite of the fact that all current botanical works of a general nature and those on the African and Indo-Ma-

layan florae maintain *Kickxia* Blume for a genus of apocynaceous plants. Under the circumstances it would seem that *Kickxia* Blume must be abandoned, as its use is distinctly invalidated by Dumortier's previous use of the same name for a different genus of plants.

The genus under discussion was originally described in 1826 as *Hasseltia* Blume, this name being invalidated by the earlier *Hasseltia* HBK. The first description of the genus under the name *Kickxia* was published in 1848,² but as early as 1828 Blume had realized the necessity of a new name for his *Hasseltia* and proposed³ to substitute the name *Kickxia* which, however, due to a typographical error appears as *Kixia*; as Blume himself in later publishing a description and figure of this genus altered the name to *Kickxia* and, further, as the genus was dedicated to Prof. Jean Kickx no other explanation of *Kixia* is possible and accordingly this form has no valid standing.

No new name is necessary for this apocynaceous genus in view of the fact that G. Don⁴ has proposed the generic designation *Kibatalia* for *Hasseltia* Blume, non HBK. So long as individual botanists differ in their conception as to what constitutes and what does not constitute a genus cases of nomenclature like this will occur; and unless Blume's generic name be definitely abandoned we have here a case where *Kickxia* Blume will be recognized by those botanists who do not recognize *Kickxia* Dum. as distinct from *Linaria*, while those who recognize Dumortier's genus as a valid one cannot recognize *Kickxia* Blume as a generic designation. The logical course to follow in this case seems to be to abandon Blume's generic name and adopt *Kibatalia* for the group as proposed by G. Don.

KIBATALIA LONGIFOLIA sp. nov.

Arbor glabra; foliis chartaceis, oblongis, usque ad 17 cm longis, basi acutis, apice acutis vel breviter acuminatis, nervis utrinque circiter 10, tenuibus, vix anastomosantibus; inflorescentiis 2- vel 3-floris, breviter pedunculatis, corollae tubo circiter 2.5 cm longo, lobis 4 cm longis; folliculis subligneis, rectis vel leviter curvatis, 17 ad 20 cm longis, 2 cm diametro.

A glabrous tree, about 16 m high, the branchlets smooth, reddish-brown, the branches of about the same color and distinctly lenticellate. Leaves firmly chartaceous, oblong, 12 to 17 cm long,

² Blume, C. L. Rumphia 4 (1848) 25.

³ Blume, C. L. Fl. Jav. Praef. 1 (1828) VII.

⁴ Gen. Syst. 4 (1838) 86.

4.5 to 6.5 cm wide, the base acute, apex acute to very shortly and obscurely acuminate; lateral nerves about 10 on each side of the midrib, slender, distinct, somewhat curved, scarcely anastomosing; petioles 5 to 8 mm long. Inflorescences axillary and terminal, usually 2- or 3-flowered, the peduncles 1 cm long or less, the pedicels 2 to 3 cm in length. Calyx-lobes broadly ovate to elliptic-ovate, rounded to subacute, 4 to 5 mm long. Corolla-tube cylindric for about 1.6 cm, then inflated for about 1 cm, the lobes about 4 cm long. Disk cylindric, 3 to 4 mm high, irregularly and coarsely toothed. Ovary glabrous, ovoid, narrowed upward; style about 2 cm long. Anthers inserted at the expansion of the corolla tube, lanceolate, long-acuminate, about 9 mm long, the basal indurated part of the connective ovoid, about 3 mm long. Follicles somewhat woody, divaricate, straight or slightly curved, 17 to 20 cm long, about 2 cm in diameter. Seeds linear-lanceolate, long-acuminate, about 3 cm long, the coma copious, the hairs about 4 cm in length.

MINDANAO, Davao Province, Santa Cruz, Balutakay, *For. Bur.* 27534 *De Mesa*, April 28, 1919, growing in deep rich soil at an altitude of 40 meters with the local Tagakaolo name *klagnita*.

The alliance of this species is apparently with *Kibatalia wigmami* (Koord.) Merr. of Celebes, from which it differs conspicuously in its slenderly nerved leaves, the lateral nerves scarcely anastomosing.

KIBATALIA STENOPETALA sp. nov.

Arbor glabra, circiter 5 m alta, ramulis tenuibus; foliis subcoriaceis, oblongo-ellipticis, 5 ad 7 cm longis, utrinque subaequaliter angustatis, acuminatis, nervis utrinque circiter 6; floribus axillaribus, solitariis vel binis, tubo corollae 1.5 cm longo, cylindrico, intus pubescens, lobis anguste lanceolatis, acuminatis, circiter 2.5 cm longis, 4 mm latis.

A glabrous tree, about 5 m high, the branches nearly black when dry. Leaves subcoriaceous, oblong-elliptic, shining, 5 to 7 cm long, 1.5 to 3 cm wide, subequally narrowed to the blunt-acuminate apex and to the somewhat decurrent-acuminate base; lateral nerves about 6 on each side of the midrib, distinct, the reticulations very obscure; petioles 2 to 4 mm long. Flowers white, axillary, solitary or in pairs, their pedicels about 2 cm long. Calyx-lobes broadly ovate, 1.5 to 2 mm long, acute or obtuse. Corolla-tube cylindric, about 1.5 cm long, 2.5 mm in diameter, not at all enlarged upward, pubescent inside, the lobes narrowly lanceolate, acuminate, about 2.5 cm long, 4 mm wide. Anthers narrowly lanceolate, acuminate, 5 mm long, the indurated

base of the connectives broadly ovate, about 1 mm long. Disk obscurely toothed, 1 mm high.

MINDANAO, Surigao Province, *Bur. Sci.* 34691 Ramos & Pascasio, June 14, 1919, along streams at low altitudes at the iron deposit on the northeast coast.

This species is at once distinguished from *Kibatalia blancoi* Merr., to which it is most closely allied, by its cylindric corollatubes which are not enlarged upward, and by its narrowly lanceolate corolla-lobes which do not exceed 4 mm in width.

The hitherto described species of this genus are as follows:

KIBATALIA AFRICANA (Benth.) comb. nov.

Kickxia africana Benth. in Hook. Ic. III 3 (1877-79) 59, t. 1276.

Tropical Africa, Kamerun, *Preuss* 1382!

KIBATALIA ARBOREA (Blume) G. Don Gen. Syst. 2 (1837) 86.

Hasseltia arborea Blume Bijdr. (1826) 1045.

Kickxia arborea Steud. Nomencl. ed. 2, 1 (1840) 846; Blume Rumphia 4 (1848) 26, t. 179, f. 1.

Kixia arborea A. DC. Prodr. 8 (1844) 408.

Java, cult. *Hort. Bogor.* IV-A-80!, IV-A-80a!, XI-B-186!.

KIBATALIA BLANCOI (Rolfe) comb. nov.

Kickxia blancoi Rolfe in Journ. Linn. Soc. Bot. 21 (1884) 313.

Kickxia arborea F.-Vill. Novis. App. (1880) 132; Naves in Blanco Fl. Filip. ed. 3 (1877-83) t. 423 bis, non Blume.

Kickxia merrittii Merr. in Philip. Journ. Sci. 4 (1909) Bot. 315.

Kickxia macgregorii Elm. Leaf. Philip. Bot. 4 (1912) 1457.

A Philippine species widely distributed from northern Luzon southward to Guimaras and Negros, represented by *For. Bur.* 26678 Peñas, 25863 Adduru, 25465 Paraíso, 20964 Villamil, 25726 Mabesa, 7649 Curran & Merritt, 11488 Merritt, 21545 Tamesis, 15113 Tabat, Elmer 12373, Wenzel 320.

KIBATALIA BORNEENSIS (Stapf) comb. nov.

Kickxia borneensis Stapf in Hook. Ic. IV 7 (1901) t. 2693.

Borneo.

KIBATALIA ELASTICA (Preuss) comb. nov.

Kickxia elastica Preuss in Notizbl. Bot. Gart. Berlin 2 (1899) 353.

Tropical Africa, Kamerun, *Zenker* 188!

KIBATALIA LATIFOLIA (Stapf) comb. nov.

Kickxia latifolia Stapf in Kew Bull. (1898) 307.

Tropical Africa.

KIBATALIA SCHEFFERI (K. Schum.) comb. nov.

Kickxia schefferi K. Schum. in Notizbl. Bot. Gart. Berlin 3 (1900) 81.

German East Africa, herb. *Amani* 416!

KIBATALIA WIGMANI Koord. in Meded. Lands Plantent. 19 (1898) 521.
Celebes, *Koorders 16045!*

KIBATALIA ZENKERI (K. Schum.) comb. nov.

Kickxia zenkeri K. Schum. in Notizbl. Bot. Gart. Berlin 3 (1900) 81.
Tropical Africa.

PARSONSIA R. Brown

PARSONSIA PHILIPPINENSIS sp. nov.

Frutex scandens, partibus junioribus cinereo-pubescent; foliis oppositis, subcoriaceis, oblongo-ellipticis ad oblongo-ovatis, 8 ad 13 cm longis, basi leviter acuminatis, apice tenuiter acute acuminatis, nervis utrinque circiter 6, distinctis; inflorescentiis terminalibus, anguste paniculatis, 10 ad 12 cm longis, floribus umbellatim dispositis, extus pubescens, corollae tubo 5 mm longo, filamentis villosis, haud contortis.

A woody vine, the young branchlets and inflorescences sparingly cinereous-pubescent, the branchlets terete, smooth, dark reddish-brown when dry. Leaves subcoriaceous, oblong-elliptic to oblong-ovate, 8 to 13 cm long, 3.5 to 6 cm wide, dark olivaceous when dry, the base usually somewhat acuminate, apex sharply and slenderly acuminate; lateral nerves about 6 on each side of the midrib, distinct, the reticulations lax; petioles 1 to 2 cm long. Inflorescences terminal, paniculate, peduncled, 10 to 12 cm long, more or less pubescent, the flowers subumbellately arranged at the tips of the primary branches, the lower branches 2 cm long or less. Flowers white, their pedicels about 5 mm long. Calyxlobes obtuse or rounded, 2 to 2.5 mm long. Corolla-tube about 5 mm long and 3 mm in diameter, somewhat angled, glabrous below, pubescent above, the lobes oblong, 4 mm in length. Disklobes broadly ovate, rounded, about 0.6 mm long. Anthers narrowly lanceolate, 3.5 mm long, the filaments villous, not twisted.

MINDANAO, Surigao Province, *Eur. Sci. 34585 Ramos & Pascasio*, April 25, 1919, at the iron deposit on the northeast coast along streams at an altitude of about 500 meters.

The distinguishing characters of the present species are its narrowly paniculate inflorescences and its slenderly acuminate, opposite leaves.

ASCLEPIADACEAE

HOYA R. Brown

HOYA CARDIOPHYLLA sp. nov. § *Euhoya*.

Planta epiphytica, ramulis leviter pilosis, glabriscentibus; foliis oppositis, late ovatis, basi late rotundatis et perspicue cordatis, apice breviter acute acuminatis, 5 ad 7 cm longis, in

siccitate subflaccidis, nervis utrinque circiter 4, patulis, cum reticulis laxis subperspicuis; umbellis multifloris, floribus glabris, circiter 1 cm diametro, corolla rotata, lobis rhomboideo-ovatis, obtusis vel acutis, processibus turgidis, crustaceis, oblongo-ovatis, acuminatis.

An epiphytic vine, the branchlets sparingly pilose, soon becoming glabrous. Leaves heart-shaped, apparently fleshy when fresh, rather flaccid when dry, 5 to 7 cm long, 4.5 to 5 cm wide, pale when dry, glabrous or the younger ones slightly ciliate near the basal margins, the base broadly rounded and distinctly cordate, the sinus acute, the basal lobes broadly rounded, the apex shortly and sharply acuminate; petioles 5 to 7 mm long; lateral nerves about 4 on each side of the midrib, somewhat spreading, anastomosing, the reticulations lax and distinct on both surfaces. Umbels many-flowered, the flowers yellowish-white, usually 5-merous, rarely 4-merous, 10 to 11 mm in diameter, their pedicels about 2 cm long, glabrous. Calyx-lobes triangular-ovate, acute or obtuse, 1 mm long. Corolla rotate, the lobes rhomboid-obovate, about 4 mm long, obtuse or somewhat acute, the tips more or less inflexed. Lower lobe of the coronal processes oblong-ovate, acuminate, turgid, somewhat crustaceous, the upper surface somewhat concave. Staminal column short, sessile.

DINAGAT, *Bur. Sci.* 35160 Ramos & Pascasio, May 13, 1919, on tree trunks at low altitudes.

A species well characterized by its broadly ovate, rather prominently cordate, shortly and sharply acuminate, conspicuously and laxly reticulate leaves.

HOYA RETICULATA sp. nov. § *Euhoya*.

Planta epiphytica, scandens, pedicellis exceptis glabra; foliis coriaceis, ovatis ad oblongo-ovatis, nitidis, 8 ad 12 cm longis, basi late rotundatis, apice tenuiter acute acuminatis, in siccitate utrinque perspicue reticulato-rugosis, nervis utrinque circiter 4, patulis, vix perspicuis; umbellis multifloris, pedunculo usque ad 10 cm longo, pedicellis leviter pubescens; floribus rotatis, circiter 1 cm diametro, glabris, corollae lobis rhomboideo-ovatis, acutis, processibus crustaceis, turgidis, oblongo-ovatis, acutis; folliculis 9 ad 11 cm longis, usque ad 4 mm diametro.

An epiphytic vine, glabrous except the sparingly pubescent pedicels. Leaves fleshy when fresh, coriaceous when dry, ovate to oblong-ovate, shining, 8 to 12 cm long, 4 to 7 cm wide, the base broadly rounded, the apex slenderly and sharply acuminate, the epidermis on both surfaces coarsely reticulate-wrinkled when dry; petioles 1 to 2.5 cm long; lateral nerves about 4 on each

side of the midrib, somewhat spreading. Umbels many-flowered, their peduncles 2 to 10 cm in length, the somewhat thickened parts marked with scars of fallen pedicels, 1 to 6 cm in length, the pedicels 1.5 to 2 cm long, slightly pubescent. Flowers rotate, glabrous, about 1 cm in diameter, yellowish-white. Calyx-lobes ovate, acute, about 1 mm long. Corolla lobes 4 to 4.5 mm long, about 3.5 mm wide, rhomboid-ovate, acute, spreading, glabrous. Coronal processes crustaceous, the lower lobes turgid, oblong-ovate, acute, about 2.5 mm long, the upper surface flat. Staminal column short, sessile. Follicles slender, cylindric, somewhat acuminate, 9 to 11 cm long, up to 4 mm in diameter, the seeds terete, about 3 mm long.

MINDANAO, Surigao Province, *Bur. Sci.* 34530 Ramos & Pascasio, April 17, 1919, in swampy thickets at low altitudes.

This species is manifestly allied to *Hoya cardiophylla* described above but is readily distinguished by its differently shaped, slenderly acuminate leaves which are broadly rounded but not cordate at the base, its pubescent pedicels, and other characters.

TELOSMA Coville

TELOSMA PARVIFLORA sp. nov.

Planta scandens, glabra; foliis membranaceis, ovatis, 15 ad 18 cm longis, perspicue cordatis, apice tenuiter acuminatis; inflorescentiis laxis, calycis lobis 2 mm longis; corollae tubo cupulato, 3 mm longo, lobis anguste lanceolatis, acuminatis, circiter 6 mm longis; folliculis acuminatis, usque ad 15 cm longis.

A glabrous vine, the branches up to 5 mm in diameter. Leaves membranaceous, ovate, olivaceous, 15 to 17 cm long, 9 to 12 cm wide, the base prominently cordate, the apex rather abruptly and slenderly acuminate; lateral nerves about 5 on each side of the midrib, prominent, the reticulations lax, distinct. Inflorescences axillary, lax, the flowers greenish-yellow, their pedicels 5 to 7 mm long. Calyx-lobes oblong, membranaceous, 2 mm long. Corolla glabrous, the tube cup-shaped, about 3 mm long, wider than long, the lobes narrowly lanceolate, acuminate, about 6 mm in length. Ovary, stamens and corona about 2 mm long and wide, the free tips of the coronal processes ovate, acute or slightly acuminate, about 0.5 mm long. Follicles lanceolate in outline, acuminate, narrowed below to the acute or abruptly obtuse base, 13 to 15 cm long, when dry and somewhat flattened 3 to 4 cm wide. Seeds thin, brownish, ovate, about 1.2 cm long, rounded, the coma copious. Peduncles of the infructescences elongated, including the few branches up to 15 cm in length.

SIARGAO, *Bur. Sci. 35011 Ramos & Pascasio*, May 27, 1919, in dry forests at low altitudes.

In the genus, if correctly placed, this species is easily recognized by its short corolla-tube and its slender corolla-lobes.

VERBENACEAE

CALLICARPA Linnaeus

CALLICARPA LONGIVILLOSA sp. nov.

Arbor parva, ramulis et petiolis densissime et longe ferrugineo-villosis; foliis chartaceis, oblongo-ovatis, 18 ad 25 cm longis, integris vel subintegris, apice tenuiter longissime caudato-acuminatis, basi acutis, utrinque plus minusve stellato-tomentosis, nervis utrinque 10 ad 12; cymis axillaribus, longe pedunculatis, usque ad 10 cm diametro, bracteis linearis, 5 ad 7 mm longis; calycis dense stellato-tomentosis, obscure 4-dentatis, 2 mm longis.

A tree, about 5 m high. The branches and petioles densely villous with long, spreading, ferruginous hairs. Leaves chartaceous, oblong-ovate, entire, 18 to 25 cm long, 8 to 10 cm wide, narrowed upward to the very slender, caudate acumen, the latter up to 5 cm in length, base acute, usually inequilateral, both surfaces more or less stellate-pubescent and with elongated simple hairs on the midrib and nerves, the indumentum dense only on the midrib and nerves; lateral nerves 10 to 12 on each side of the midrib, distinct as are the reticulations on the lower surface; petioles about 4 cm long. Cymes axillary, long-peduncled, about 12 cm long including the peduncle and up to 10 cm in diameter, dichotomous, stellate-pubescent and villous, the bracts linear, 5 to 7 mm long. Flowers violet, 4-merous. Calyx cup-shaped, densely stellate-pubescent, obscurely 4-toothed, about 2 mm long and wide. Corolla puberulent, the tube cylindric, 3 mm long and the lobes broadly oblong, rounded, 1.3 mm long. Stamens exserted, the anthers about 2 mm in length.

MINDANAO, Surigao Province, *Bur. Sci. 34538 Ramos & Pascasio*, April 19, 1919, in forests along streams at low altitudes.

The prominent characteristics of this species are its densely ferruginous-villous branches, branchlets, and petioles, similar simple hairs being intermixed with the stellate indumentum on other parts of the plant; its very slenderly acuminate, entire leaves; and its long-peduncled inflorescences.

CALLICARPA FASCICULIFLORA sp. nov.

Frutex vel arbor parva, partibus junioribus villosis, ramis et foliis et inflorescentiis stellato-tomentosis; foliis oblongis ad

ellipticis, 13 ad 24 cm longis, tenuiter acuminatis, nervis utrinque circiter 10; floribus fasciculatis, sessilibus vel breviter pedicellatis, fasciculis plerumque in axillis defoliatis, 1 ad 1.5 cm diametro; calycis dense villosis atque stellato-tomentosis, tubo 3 mm longo, dentibus lanceolatis, acuminatis, 1.5 ad 2 mm longis.

A shrub or small tree, the younger parts villous and stellate-tomentose, especially the branchlets and petioles. Leaves thinly chartaceous, oblong to elliptic, 13 to 24 cm long, 6 to 12 cm wide, the upper surface olivaceous, sparingly stellate-pubescent, becoming glabrous or nearly so, the lower surface pale, stellate-pubescent on the midrib, nerves, and reticulations, base acute, apex rather slenderly acuminate, margin entire or very obscurely and distantly toothed; lateral nerves about 10 on each side of the midrib, distinct; petioles 1 to 2 cm long. Inflorescences mostly in the axils of fallen leaves, the flowers fascicled, sessile or shortly pedicelled, the fascicles rather dense, 1 to 1.5 cm in diameter. Bracts narrowly oblong, stellate-pubescent, 4 to 5 mm long, the bracteoles filiform, 3 mm long. Calyx densely villous and stellate-tomentose, the tube cylindric, 3 mm long, the teeth 4, lanceolate, acuminate, 1.5 to 2 mm long. Corolla pale violet, the tube 4 mm long, externally somewhat pubescent, the lobes 4, oblong, rounded, about 2 mm long. Stamens exserted, the anthers 3 mm long. Fruit globose, about 2.5 mm in diameter, glabrous, inclosed by the calyx.

BUCAS GRANDE, *Bur. Sci.* 35123 Ramos & Pascasio, June 9, 1919, in open forests at low altitudes.

This species is readily distinguished from its congeners by its fascicled, sessile or subsessile flowers, this type of inflorescence being unknown to me in any other species of the genus.

ACANTHACEAE

GYMNOSTACHYUM Nees

GYMNOSTACHYUM SPICIFORME (Elm.) comb. nov.

Justicia spiciformis Elm. Leaf. Philip. Bot. 1 (1908) 349.

LEYTE, Palo, *Elmer* 7347, January, 1906.

This species is known only from the type collection, and is clearly a species of *Gymnostachyum*, agreeing in all characters with the typical representatives of the genus.

GYMNOSTACHYUM LONGISPICATUM sp. nov.

Herba erecta, usque ad 50 cm alta, plus minusve pubescens; foliis oblongis ad elliptico-oblongis, 10 ad 15 cm longis, obtusis, nervis utrinque circiter 6; spicis elongatis, usque ad 20 cm longis,

multifloris; floribus alternis, bracteis bracteolisque ovatis, acuminatis, glabris vel subglabris, calycis lobis lanceolatis; capsulis lineari-oblongis, glabris, circiter 1.5 cm longis, seminibus circiter 10.

An erect, sparingly branched, more or less pubescent herb, up to 50 cm high. Leaves membranaceous or chartaceous, dark-colored when dry, oblong to elliptic-oblong, 10 to 15 cm long, 4 to 8 cm wide, the base obtuse to acute on the lower ones, the uppermost ones sometimes cordate, the apex obtuse or rounded, margins somewhat undulate, the upper surface glabrous or nearly so, dark olivaceous, the lower somewhat pubescent on the midrib and nerves; lateral nerves about 6 on each side of the midrib, slender, distinct; petioles of the lower leaves up to 2 cm long, of the uppermost ones 5 mm long or less. Spikes elongated, up to 20 cm in length, many-flowered, the flowers alternate, sessile, white, the subtending bracts ovate, acuminate, 2 mm long, the bracteoles similar but slightly smaller, glabrous or nearly so. Calyx 3 to 3.5 mm long, the tube 1.5 mm in length, the lobes lanceolate, acuminate. Corolla-tube 3 mm long, the upper lobe broadly ovate, erect, 3 mm long, the lower one spreading, 3-lobed, each lobe elliptic-oblong, about 3 mm long, 2 to 2.5 mm wide, anther about 2 mm long. Capsule linear-oblong, glabrous, about 1.5 cm long and 2 mm wide, each valve carrying about 5 seeds.

SIARGAO, *Bur. Sci.* 34999 *Ramos & Pascasio*, May 27, 1919, in thickets or forests at low altitudes.

A species well characterized by its ample leaves and by its greatly elongated spikes.

GESNERIACEAE

CYRTANDRA Forster

CYRTANDRA CAULIFLORA sp. nov.

Frutex erectus, foliis oppositis, aequalibus, perspicue ferrugineo- vel castaneo-villosus; foliis oblanceolatis ad oblongo-oblanceolatis, 10 ad 20 cm longis, tenuiter acuminatis, basi cuneatis, margine perspicue dentatis, supra subglabris, nervis utrinque circiter 8; inflorescentiis caulinis et e ramis majoribus, cymosis, circiter 5 cm longis, dense villosis; calycis circiter 1.5 cm longis, lobis linearis, 1 cm longis; corolla 2 cm longa.

An erect shrub, the leaves opposite, those of each pair subequal, the branchlets, petioles, inflorescences, and leaves on the lower surface conspicuously ferruginous- or castaneous-villous with weak spreading hairs. Leaves oblanceolate to oblong-

oblanceolate or the lower ones sometimes lanceolate, 10 to 20 cm long, 2 to 6 cm wide, the apex rather slenderly acuminate, narrowed below to the cuneate base, the margins conspicuously toothed, especially toward the apex where the teeth are large and irregular, the upper surface dark-olivaceous with very few widely scattered, weak hairs, ultimately glabrous or nearly so, the lower surface conspicuously and softly villous; lateral nerves about 8 on each side of the midrib, prominent, the reticulations very lax; petioles 2 to 3 cm long. Inflorescences from the trunk or larger branches below the leaves, peduncled, cymose, all parts densely villous with weak spreading hairs, the peduncles 1 to 2 cm long, the pedicels 5 to 8 mm long, the subtending bracts lanceolate or linear-lanceolate, 1 cm long or less. Calyx including the very slender lobes about 1.5 cm long, the lobes linear, about 1 cm in length. Corolla slender, about 2 cm long, externally prominently villous. Style somewhat pubescent.

PANAY, Capiz Province, Libacao, *Bur. Sci.* 35342 Martelino & Edaño, June 3, 1919, along streams at low altitudes, the flowers white.

This species apparently belongs in the group with *Cyrtandra ramiflora* Elm., from which *C. laxa* Elm. is scarcely distinguishable. It differs radically from the above species in its totally different leaves, flowers, and inflorescences.

TRICHOSPORUM D. Don

TRICHOSPORUM PANAYENSE¹ sp. nov.

Planta scandens, partibus junioribus parce pilosis vel glabris; foliis coriaceis, oblongo-ovatis ad oblongis, usque ad 6 cm longis, basi rotundatis, apice acutis vel obtusis; floribus axillaribus, solitariis vel binis, glabris vel subglabris, calycis subtruncatis, cylindraceutis, 1.2 ad 1.5 cm longis, corolla leviter curvata, 4 ad 4.5 cm longa.

A scandent vine, the stems up to 3 mm in diameter, the younger parts sparingly pilose with weak, widely scattered hairs, soon becoming glabrous or nearly so. Leaves fleshy when fresh, coriaceous when dry, oblong-ovate to oblong, 2.5 to 6 cm long, 1.5 to 2.5 cm wide, the base rounded, the apex acute or obtuse; lateral nerves usually 4 on each side of the midrib, often obsolete, never prominent; petioles about 5 mm long. Flowers axillary, usually 2 on each peduncle, the peduncle less than 5 mm long. Calyx cylindric, truncate or somewhat angulate, 1.2 to 1.5 cm long, usually glabrous. Corolla apparently reddish, somewhat curved, 4 to 4.5 cm long, glabrous or nearly so, the lobes ovate

to ovate-elliptic, rounded, about 7 mm long. Capsules slender, up to 20 cm long, about 3 mm in diameter, glabrous.

PANAY, Mount Bulilao, Mount Salibongbong, and Libacao, *Bur. Sci.* 35720 (type), 35392, 35535, 35588, 35676 Martelino & Edaño, June, 1919, in forests along streams, ascending to an altitude of 600 meters.

In general this species resembles, and is manifestly allied to, *Trichosporum truncatum* Elm. and *T. bakeri* Merr.; but the calyx is half as long as in the latter, while it differs from the former in several characters.

RUBIACEAE

TIMONIUS de Candolle

TIMONIUS ROTUNDUS sp. nov.

Arbor glabra, circiter 5 m alta; foliis crasse coriaceis, late elliptico-ovatis, nitidis, apice late rotundatis, basi subtruncatis ad acutis, nervis utrinque 4 vel 5, valde perspicuis; infructescentiis axillaribus, pendunculatis, usque ad 10 cm longis, dichotome ramosis, ramis primariis usque ad 7 cm longis; fructibus sessilibus, depresso-globosis, glabris, 5 ad 8 mm diametro.

A small glabrous tree, about 5 m high, the branchlets about 6 mm in diameter, marked with large petiolar scars. Leaves thickly coriaceous, broadly elliptic-ovate, brownish-olivaceous and shining when dry, the apex broadly rounded, base subtruncate to acute; lateral nerves 4 or 5 on each side of the midrib, very prominent, the reticulations fine, dense; petioles about 4 cm long; stipules oblong-elliptic, rounded, about 2 cm long, deciduous. Infructescences axillary, peduncled, up to 10 cm long, dichotomously branched, the peduncles about 3 cm long, the primary branches up to 7 cm in length, the secondary ones when present shorter. Fruits sessile, arranged on one side of the primary or secondary branches, depressed-globose, pale when dry, 5 to 8 mm in diameter.

DINAGAT, *Bur. Sci.* 35176 Ramos & Pascasio, May 17, 1919, in forests at low altitudes.

A species apparently belonging in the group with *Timonius obovatus* Elm. but with very differently shaped, much larger leaves.

TIMONIUS PANAYENSIS sp. nov.

Arbor dioica, partibus junioribus inflorescentisque ferrugineo pubescens; foliis variabilis, 12 ad 28 cm longis, coriaceis, oblongis ad ovato-ellipticis vel obovato-ellipticis, breviter acuminate, basi acutis, subtus leviter pubescens, nervis utrinque

circiter 10, valde perspicuis, inflorescentiis ♂ circiter 4 cm longis, pedunculatis, dichotome ramosis, ramis 2, paucifloris; floribus sessilibus, calycis cylindraceis, 10 ad 12 mm longis, 2- vel 3-lobatis; fructibus pedunculatis, solitariis, ellipsoideis, circiter 1.5 cm diametro, ferrugineo-pubescens, calycis tubo persistentibus, cylindraceis.

A dioecious tree, 10 to 15 m high, the younger parts and inflorescences distinctly ferruginous-pubescent with short, appressed hairs. Branches terete, glabrous, the ultimate branchlets somewhat angled, pubescent. Leaves opposite, exceedingly variable in size, coriaceous, oblong to ovate-elliptic or obovate-elliptic, shortly acuminate, base acute, the upper surface glabrous, the lower sparingly pubescent, 12 to 28 cm long, 5 to 14 cm wide; lateral nerves very prominent, about 10 on each side of the midrib, the primary reticulations lax, distinct; petioles when young pubescent, in age nearly glabrous, 5 to 10 mm long; stipules oblong-ovate, shortly acuminate, pubescent, about 12 mm long. Staminate inflorescences axillary, ferruginous-pubescent, about 4 cm long, peduncled, dichotomously once-branched, few-flowered. Flowers ferruginous-pubescent, sessile. Calyx cylindric, 10 to 12 mm long, irregularly 3-toothed or 3-lobed, the teeth broad, 2 to 3 mm long. Corolla-tube about 6 mm long, the lobes 5, oblong, 5 mm in length. Fruits apparently solitary, the peduncles 2 to 2.5 cm long, the fruits ellipsoid, appressed-pubescent with short, shining, ferruginous hairs, smooth, about 1.5 cm in diameter, crowned by the elongated, persistent, cylindric calyx-tube which is about 8 mm in length.

PANAY, Capiz Province, Libacao, *Bur. Sci.* 35445 (type), 35447 Martelino & Edaño, June 13, 1919, in open forests and along small streams at low altitudes.

This species is characterized by its exceedingly variable leaves; its elongated staminate flowers; and its ellipsoid fruits which are crowned by the cylindric, persistent, elongated calyx-tube.

TIMONIUS LANCEOLATUS sp. nov.

Frutex dioicus, circiter 3 m altus, partibus junioribus et subtus foliis ferrugineo-pubescens; foliis coriaceis, lanceolatis, nitidis, 7 ad 13 cm longis, utrinque angustatis, basi cuneatis, apice tenuiter acuminatis, nervis utrinque 5 ad 7, distinctis, reticulis subobsoletis; floribus ♂ axillaribus, sessilibus, fasciculatis, calycis tubo 3 ad 4 mm longo, lobis lanceolatis, tubo aequantibus, patulis; fructibus axillaribus, solitariis, brevissime pedicellatis, depressoglobosis, 6 ad 9 mm diametro, dense pubescens.

A shrub, about 3 m high, the younger parts, flowers, and

leaves on the lower surface more or less ferruginous-pubescent. Branches grayish to reddish-brown, terete, glabrous, the growing branchlets densely ferruginous-pubescent with short appressed hairs. Leaves coriaceous, lanceolate, brownish-olivaceous when dry, shining, 7 to 13 cm long, 2 to 4.5 cm wide, narrowed to the slenderly acuminate apex and below to the cuneate base, the upper surface glabrous, the lower somewhat paler and appressed-pubescent with short hairs; lateral nerves 5 to 7 on each side of the midrib, distinct, the reticulations very obscure or often obsolete; petioles 3 mm long or less; stipules lanceolate, acuminate, about 8 mm long, connate below, deciduous. Male flowers axillary, sessile, fascicled, ferruginous-pubescent, usually 3 or 4 in a fascicle, the bracts linear-lanceolate, acuminate, 2.5 to 4 mm long. Calyx-tube 3 to 4 mm long, the lobes 5, rarely 6, lanceolate, acuminate, 3 to 4 mm long, somewhat spreading. Corolla-tube about 1 cm long, the lobes oblong, 4 mm in length. Fruits axillary, usually solitary, depressed-globose or globose, 6 to 9 mm in diameter, densely pubescent with shining, short, brownish hairs, the pedicels about 2 mm long.

DINAGAT, *Bur. Sci.* 35211 Ramos & Pascasio (type), May 12, 1919. MINDANAO, Surigao Province, *Bur. Sci.* 34613 Ramos & Pascasio, April 24, 1919. In forests at low altitudes.

This species somewhat resembles *Timonius longistipulus* Merr., but its true alliance seems to be with *T. valetonii* Elm., from which it is distinguished by its entirely differently shaped leaves.

GREENIOPSIS Merrill

GREENIOPSIS EUPHLEBIA sp. nov.

Arbor parva, plus minusve hirsuta, ramulis dense hirsutis; foliis chartaceis, oblongo-obovatis ad oblongo-oblongeolatis, breviter petiolatis, 16 ad 23 cm longis, 5 ad 10 cm latis, nitidis, in siccitate brunneis, apice acute acuminatis, basi anguste cuneatis, supra glabra, subtus ad costa nervisque hirsutis; nervis utrinque circiter 15, supra impressis, subtus valde conspicuis; paniculis terminalibus, pedunculatis, usque ad 26 cm longis, omnibus partibus hirsutis, corolla circiter 1 cm longa.

A tree, about 4 m high, rather prominently hirsute, the branchlets and inflorescences densely so, the indumentum brownish or ferruginous. Leaves oblong-obovate to oblong-oblongeolate, chartaceous, brown and shining when dry, 16 to 23 cm long, 5 to 10 cm wide, the apex shortly and sharply acuminate, the base narrowly cuneate, the upper surface glabrous or with few hairs along the midrib, the lower surface hirsute on the midrib and

nerves; lateral nerves about 15 on each side of the midrib, impressed on the upper surface, very prominent on the lower surface; petioles 1 cm long or less; stipules oblong-lanceolate, glabrous, or the median part pubescent, acuminate, 2 to 2.5 cm long, brown when dry. Panicles peduncled, terminal, up to 26 cm long, usually supplied with a few reduced leaves, all parts rather prominently hirsute. Flowers numerous, white, their pedicels 1 to 2 mm long. Calyx 6 mm long, funnel-shaped, the lobes 5, obovate to oblong-obovate, rounded, 3 mm long. Corolla 1 cm long, pubescent, funnel-shaped, the tube about 22 mm in diameter for the lower 3 mm, then expanded, the throat 6 to 7 mm in diameter, the lobes about 2 mm long and 4 mm wide, broadly rounded or retuse, the tube villous inside in the narrower part. Anthers 2 mm long.

BUCAS GRANDE, *Bur. Sci.* 35134 Ramos & Pascasio, June 9, 1919, in open forests at low altitudes.

This species is well characterized by its indumentum and by its very prominently nerved leaves, and is readily distinguishable from the other described species of the genus.

IXORA Linnaeus

IXORA ANGUSTILIMBA sp. nov.

Frutex glaber, 1 ad 2 m altus; foliis lanceolatis ad anguste lanceolatis, subcoriaceis, 7 ad 22 cm longis, 1 ad 3 cm latis, basi acutis, apice acute acuminatis, nervis utrinque circiter 20, tenuibus; cymis 6 ad 12 cm longis, laxis, pedunculatis, floribus plerumque in triadibus dispositis, calycis dentibus brevissimis, corollae tubo 1.8 cm longo, lobis anguste oblongis, 5 ad 6 mm longis.

A glabrous shrub, 1 to 2 m high. Leaves lanceolate to narrowly lanceolate, subcoriaceous, 7 to 22 cm long, 1 to 3 cm wide, subequally narrowed below to the usually acute base and above to the sharply acuminate apex, shining when dry, often somewhat falcate; lateral nerves slender, spreading, often indistinct, up to 20 on each side of the midrib; petioles 2 mm long or less, stout; stipules truncate, abruptly terminated by a 1.5 to 2 mm long acuminate tip. Inflorescences terminal and in the upper axils, usually solitary, 6 to 12 cm long, peduncled, the flowers rather laxly disposed; the primary branches up to 4 cm in length. Flowers reddish-white, usually borne in triads at the tips of the ultimate branches, their pedicels about 5 mm long, the subtending bracts lanceolate, acuminate, 1.5 mm long or less, the bracteoles subtending, the flowers similar but smaller. Calyx about

2 mm long, the teeth very short. Corolla-tube slender, about 1.8 cm long, the lobes narrowly oblong, spreading or reflexed, 5 to 6 mm long. Fruits ovoid, red when fresh, dark brown when dry, 6 to 8 mm in diameter.

MINDANAO, Surigao Province, *Bur. Sci. 34588 Ramos & Pascasio* (type), April 24, 1919. DINAGAT, *Bur. Sci. 35222 Ramos & Pascasio*, June, 1919. BUCAS GRANDE, *Bur. Sci. 35087 Ramos & Pascasio*, June 11, 1919. On dry forested slopes and ridges at low altitudes.

A species strongly characterized by its narrow, elongated leaves, apparently not closely allied to any previously described form.

IXORA TENUIPEDUNCULATA sp. nov.

Frutex glaber, foliis chartaceis, oblanceolatis, 9 ad 13 cm longis, 2 ad 3 cm latis, deorsum angustatis, basi cuneatis, apice acuminatis, nervis utrinque circiter 20; inflorescentiis axillaribus, solitariis, 3-floris, tenuiter pedunculatis, pedunculo 5 ad 6 cm longo; calycis dentibus brevissimis, corollae tubo 2.8 cm longo, lobis lineari-lanceolatis, circiter 1.2 cm longis.

A glabrous shrub. Leaves chartaceous, oblanceolate, rather pale and somewhat shining when dry, 9 to 13 cm long, 2 to 3 cm wide, narrowed below to the cuneate base, the apex distinctly acuminate; lateral nerves slender, spreading at nearly right angles, about 20 on each side of the midrib; petioles rather stout, 2 to 3 mm long; stipules broad, subtruncate, terminated by a 5-mm long filiform tip. Inflorescences axillary, solitary, 3-flowered, their peduncles very slender, 5 to 6 cm long, the pedicels slender, about 1 cm long. Flowers pink, the calyx about 2 mm long, the teeth very short. Corolla-tube slender, about 2.3 cm long, the lobes linear-lanceolate, about 1.2 cm long. Fruits brown when dry, about 7 mm long and nearly 1 cm wide.

MINDANAO, Surigao Province, *Bur. Sci. 34475 Ramos & Pascasio*, April 30, 1919, in damp forests at low altitudes.

A species strongly characterized by its 3-flowered inflorescences and its very slender elongated peduncles.

IXORA CONFERTIFLORA sp. nov.

Frutex glaber, circiter 3 m altus; foliis coriaceis, oblongo-ellipticis ad oblongo-obovatis, 9 ad 13 cm longis, basi cuneatis, apice acute acuminatis, nervis utrinque circiter 12, tenuibus; stipulis tenuiter caudato-acuminatis; cymis subcapitatis, pedunculatis, axillaribus terminalibusque, 1.5 ad 3 cm diametro, pedunculo 2 ad 6 cm longo; bracteis bracteolisque linearis, 2.5 ad

4 mm longis, calycis dentibus oblongis ad oblongo-ellipticis, quam tubo paullo longioribus, corollae tubo 10 ad 12 mm longo, lobis ellipticis, 2.5 mm longis.

A glabrous shrub, about 3 m high. Leaves coriaceous, dark brown and shining when dry, oblong-elliptic to somewhat oblong-obovate, 9 to 13 cm long, 3 to 5.5 cm wide, the base cuneate, the apex sharply acuminate; lateral nerves spreading at nearly right angles, about 12 on each side of the midrib, slender, distinct, the reticulations evident; petioles 5 mm long or less; stipules broadly ovate, abruptly contracted into a slender, caudate, 5 to 7 mm long tip. Cymes subcapitate, peduncled, axillary, and terminal, 1.5 to 3 cm in diameter, few- to many-flowered, their peduncles 2 to 6 cm long, the terminal one usually subtended by a pair of ovate to broadly ovate, rounded, or cordate, sessile leaves, 3 to 5 cm in length. Flowers white, the subtending bracts and bracteoles linear, 2.5 to 4 mm long. Calyx-tube somewhat ovoid, about 2 mm long, the lobes oblong to oblong-elliptic, acute, usually exceeding the tube in length. Corolla-tube slender, 10 to 12 mm long, the lobes elliptic, 2.5 mm in length. Fruits red when fresh, dark brown when dry, ovoid, 5 to 7 mm in diameter, crowned by the conspicuous calyx-lobes.

DINAGAT, *Bur. Sci.* 35206 Ramos & Pascasio, May 12, 1919, in forests at low altitudes.

This species somewhat resembles *Ixora capitulifera* Merr. but differs very radically in its calyx characters. It is easily recognizable by its subcapitate, dense, panicle cymes; its very slender bracts and bracteoles; its calyx-teeth distinctly exceeding the tube in length; and in its rather short, white flowers.

CAMPANULACEAE

PENTAPHRAGMA Wallich

PENTAPHRAGMA PLATYPHYLLA sp. nov.

Planta erecta, 0.5 m alta, partibus junioribus dense pubescens; foliis late ovatis ad elliptico-ovatis, chartaceis, leviter inaequaliteralibus, usque ad 28 cm longis, basi, saltem in foliis majoribus, distincte cordatis, nervis utrinque circiter 6; racemis axillaribus, pubescens, bracteis anguste oblongis; floribus haud secundis, pedicellatis, tubo perianthii pubescens, 3 cm longo, calycis lobis inaequalibus, majoribus usque ad 2.5 cm longis.

A suffrutescent plant, about 0.5 m high, the younger parts densely pubescent with crisped hairs. Leaves broadly ovate to elliptic-ovate, slightly inequilateral, chartaceous, up to 28 cm long and 20 cm wide, the upper surface glabrous, the lower more

or less pubescent with scattered hairs, the apex subacute, the margin with distant, short, blunt teeth, base somewhat inequilateral, distinctly cordate, at least that of the larger leaves; lateral nerves about 6 on each side of the midrib, prominent; petioles up to 10 cm long. Inflorescences axillary, the rachis and peduncle up to 8 cm long, pubescent, the bracts narrowly oblong, about 1 cm long. Flowers white, not secund, their pedicels about 1.5 cm long, gradually merging with the perianth-tube which is up to 3 cm in length, terete or obscurely angled and more or less pubescent. Calyx lobes white, spreading, elliptic, the two larger ones 2 to 2.5 cm long, about 1.5 cm wide, rounded, the three others smaller, usually about half as large as the other two. Petals 5, oblong to narrowly oblong-obovate, rather thick, rounded, about 10 mm long, 5 to 6 mm wide.

DINAGAT, *Bur. Sci.* 35258 Ramos & Pascasio, May 12, 1919, in forests along small streams at low altitudes.

A species belonging in the same group with *Pentaphragma philippinense* Merr., from which it differs especially in its larger leaves, which are cordate at the base.

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